

No. 2
Science Fiction
QUARTERLY

144 PAGES
NO ADVERTISING

Science Fiction QUARTERLY

No.
2

WINTER ISSUE
A STIRRING
75,000
WORD NOVEL
COMPLETE
IN THIS
ISSUE!

25¢

also
GALLUN,
WEINBAUM



144 FULL
PAGES

**THERE ARE 2
STF BOOKS THAT
CAN'T BE BEAT !**

**NOW ISSUED REGULARLY
EVERY OTHER MONTH!!!**

Fantasy fans deserve
the best and
that's what they get
in the two best
STF Books

SCIENCE FICTION

Featuring Your Favorite Authors and Artists

Stories by

DOM PASSANTE
JOHN COLERIDGE
EPHRIAM WINIKI
BOB OLSEN
CARL JACOBI

DENNIS CLIVE
SPEYTON HENRY
NELSON S. BOND
PAUL EDMONDS
HENRY J. KOSTKOS

with Illustrations by

PAUL BIRO
BINDER MESKIN
STREETER SCOTT
NOVICK and others

FUTURE FICTION

Featuring Short Stories, Novelets and Novels by—

AMELIA REYNOLDS LONG
RUSSELL J. HODGKINS
OTIS ADELBERT KLINE
THORNTON AYRE
RAYMOND Z. GALLUN
WILBUR S. PEACOCK
ED EARL REPP
LLOYD ARTHUR ESHBACH
E. A. GROSSNER
EANDO BINDER

MANLY WADE WELLMAN
NEIL R. JONES
J. HARVEY HAGGARD
ISAAC ASIMOU
LESLIE F. STONE
DUANE W. RIMEL
MILES J. BREVER
PHILIP JACQUES BARTEL
FREDERIC ARNOLD KUMMER, JR.
EDMOND HAMILTON and others

On Sale at Regular Intervals at All Good Newsstands

Science Fiction QUARTERLY

WINTER . 1941

COMPLETE BOOK-LENGTH NOVEL

THE SHOT INTO INFINITY O. W. Gail 4

This is the thrilling story of August Kort and his fantastic plans to conquer space in the face of public ridicule, financial reverses, and discouraging scientific difficulties! Through the masterful literary ability of the author, you will be August Kort—you will struggle to overcome both Man and Nature—you will thrill to the controls of a great rocket ship and soar into infinity—you will experience the weirdest adventure in the history of Mankind!

ASTOUNDING NOVELET

DOUBLE DESTINY Helen Weinbaum 109

Louis Demuth was the most hated man on Earth—for he withheld from the world the only cure for the dread radium plague that was wiping out the race of Man! Then from a civilization gone this million years comes one who would bring about the salvation of the race—but his appearance startles the world—he is another Louis Demuth!

SPECIAL SHORT STORY

THE WALL OF WATER Raymond Z. Gallun 129

A Wall of Water miles high, kept in place by the marvels of future science, is a wonderful accomplishment—but the weakening of that wall can spell death and destruction for all who live and toil on the ocean floor! Ruzza, the weird Uranian, risks his all to save an Earthman from the titanic forces of Nature—and an evil business Combine!

ARTIFICIAL UNIVERSE John Coleridge 138

Certain things are forbidden to the knowledge of Men—as the daring physics professors learn to their grief in their attempts to pierce the very secret of existence! The forces of Nature rebel at the probing fingers of puny Man!

SCIENCE FICTION QUARTERLY, Winter Issue, Number 2, published by COLUMBIA PUBLICATIONS, INC. Office of publication, 29 Worthington St., Springfield, Mass. Editorial and executive offices at 40 Hudson St., N. Y. C. Copyright 1940, by Columbie Publications, Inc. Entered as Second Class Matter at the Post Office, Springfield, Mass. Single copies, 25c. Yearly subscription, \$1.00.

The Shot Into Infinity

By O. W. GAIL

Meet August Kort—the man who dared to defy the cosmic elements and pierce the depths of infinity! Through the pages of this gripping novel you will thrill to the courage and daring of the man who reached for the moon—and got it!

PREFACE

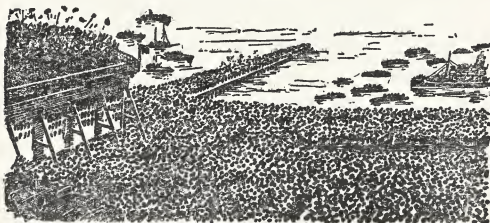
WHEN the ingenious Jules Verne wrote his "Journey to the Moon," he did not suspect how soon this problem would engage the attention of serious physicists. What he consciously treated as a fantastic utopia is to-day close to realization, and perhaps the first rocket is hissing on its way into space before this book leaves the press.

The "Shot Into Infinity" is no utopia. The Technical basis of the novel rests on the results of the most modern research and physical facts, and it is nothing but the development of the practical applications of discoveries which are no longer questioned today.

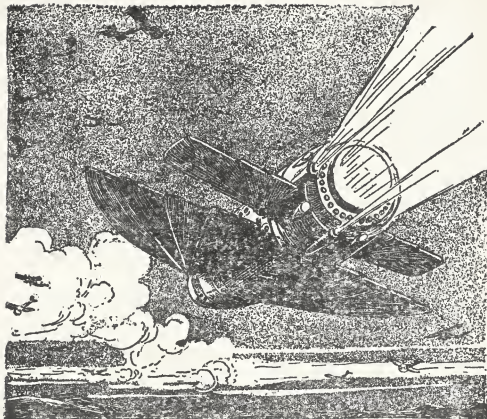
Very often persons who undeniably

possess a certain degree of judgment have asked me, with a superior and almost pitying smile, whether I seriously believe that someday people might be able to leave the earth. Once and for all let the question be answered in this place by a counter question: Why not?

In the final analysis the possibility of all the marvels of the technology of transportation depends on brute force. When the motor was invented which afforded half a horsepower for each kilogram of its own weight there sprang into existence the airplane which hitherto had been decried as a mad fantasy and speedily a way was found to overcome the little extra problems of the designs of the wings, the propeller, and so forth. The motor which is to carry persons (or for that



BY POPULAR REQUEST, WE ARE REPRINTING "THE SHOT INTO INFINITY," ONE OF THE FINEST SCIENTIFICATION NOVELS EVER TO HAVE BEEN PRESENTED, COMPLETE IN THIS ISSUE.



Once more the Geryon flew over the shed. Then it went out over the lake. Far out there it turned again to the shore and descended. The water splashed high as the wonderful bird settled down and cut through the foaming waves.

matter itself only) into space must actually develop more than 100 H.P. for each kilogram of its own weight, in order to be able to combat successfully the powerful attraction of the earth. But unless all appearances are deceptive, this motor has already been invented or at least is *en route* to discovery.

In particular two scientists of world fame have been working at this problem for years—Prof. Hermann Oberth and Prof. Robert H. Goddard, and both have solved it, though for the present only theoretically, by means of the rocket motor. Once this mode of

propulsion (which is not dependent on any atmospheric resistance and develops its full efficiency only in a vacuum) has maintained itself in practice, then the "space ship" itself becomes an alluring but absolutely solvable problem for skilled constructors. For what the uninitiated regard as unconquerable factors, the fearful cold in space, the lack of air to breathe, the absolute absence of weight, are not at all real hindrances, and we may confidently assert that the engineers of 1930-40 will be able to make vigorous assaults on these problems with air generators and heat insulators.

Complete 75,000-Word Novel

To both of these gentlemen I herewith express my sincere admiration and my hearty thanks for their co-operation.

Of all the investigators who devoted themselves to the problem of the navigation of space, at present the American Professor Goddard seems to be the most successful; for if the last reports from Worcester are accurate, in the near future the first Goddard experimental rocket (without passengers) will ascend to the moon, and mankind is at the eve of a veritable new epoch in world history.

O. W. GAIL.

CHAPTER I

MYSTERIOUS HAPPENINGS

IN one of the ravines which traverse the southern portion of the Carpathians in their steep descent to the Wallachian plain—between the romantic deeply-cut valley of the Oltu River and the pass of Predeal, over which the express trains thunder on the way from Czernowitz to Bucharest—lies the lonely monastery of Valeni.

A bad, almost untravelled road branches off from the highway above the village of Suicii and winds between darkly-wooded crags in its easy ascent to the old walls of the monastery. Long forgotten and a prey to the moss and vines, the monastery clings to the mountainside, a reminder of times long past when the orthodox Carpathian monasteries changed into stubborn castles and stout defences against encroaching Islam, and the spiritual lords were no less practiced in weapons than the bailiffs and dukes of Swabian fortresses.

* * *

It is now more than a year and a half since the inhabitants of Suicii were surprised by an unexpected visit.

The strangers arrived with a line of trucks, no one knowing whence they came or what they wanted. Then wagons came almost daily from the Oltu valley, laden with tools and building material, chests, furniture and mysterious machinery.

Curiously, yet shyly, the villagers watched, as gradually a little colony grew in the valley of Valeni—as electricity and radio made their appearance. But none of the strangers understood Roumanian or Hungarian, and so the purpose of the new colony remained a riddle. Even the magistrate in Calimanesti knew only that the people were from Little Russia and were workers of the oil magnate, Romano Vacarescu, to whom the forests about Suicii belonged, and that they were to build some dwelling houses near the monastery of Valeni.

At length the excited minds were eased; people became accustomed to the increase in population, and continued to till the cornfields and to drink the inevitable plum brandy. But one day curiosity was newly aroused by the story of a shepherd who came from Magura Cozia.

On the open plateau between Cozia and the damp valley of the upper Arges River strange buildings were being erected. Heavy concrete pillars, surrounding a circular open space, rose high in the air. Within was being built a peculiar structure, about which nobody could form a clear idea. Some claimed that it was the dome of a fortified tower, others asserted that a mighty memorial monument was being erected there, and extremely clever persons could tell (from some certain source or other) about an airport which promised Suicii greater economic importance.

But as the construction proceeded, the entire plateau was surrounded with a high fence and the entrances were carefully guarded. Thus the

imaginings of the natives had free run, and soon the most impossible stories about the mysterious structure were current.

There was also great activity within the ancient walls of Valeni. Heavy hammer strokes thundered from the subterranean cells, machines hummed day and night, and thick clouds of smoke poured from the newly erected chimney. In the abandoned monastery yard rose heaps of coal; oil tanks and steel cylinders stood in long rows by the walls; and thick bundles of electric wire ran from the monastery, some across to the plateau and others to the dwellings of the workers.

At night, when the Roumanian mountaineers were sleeping in their sheepskins on the wooden porches of their mud huts, a bright illumination shone from the old walls and cast trembling reflections on the black mountain side.

A MEETING IN THE MONASTERY

AN impressive automobile sped through the winding valley of the Oltu. The narrow foot of the valley, between the closely crowding Carpathians, gives barely room enough for the road, the river, and the single track railway which runs obliquely through the mountains from Hermanstadt to Slatina. Fairly often, in fact, the highway crosses the rails and traverses the Oltu River on shaky bridges. Coming from Ramnicul Valcea ("Garmisch," the people of Bucharest term it), the car took the sharp curves before Calimanesti at undiminished speed, climbed with a rattle the ridges of Berislavesti, and crossed Suicii in its mad course. The natives humbly knelt; they recognized the green car of the man who owned the oil wells of Ploesti and countless square kilometers of Carpathian forest.

By speculation on a grand scale the insignificant little Roumanian had in a few decades amassed a fortune reckoned among the greatest in the country. Oil and wood had been his motto; oil for export, bringing him good foreign money, and wood for the wide treeless plains of Wallachia.

The car stopped squarely before the monastery.

"Where is Mr. Suchinow?" the passenger demanded of the young man who promptly opened the door of the car. He spoke French, the language of an aristocrat of Bucharest.

"Monsieur Suchinow is waiting for you down at the office."

"Too bad! Call for me again in an hour and a half," he ordered the chauffeur, and then he descended into the dark cells of the monastery.

In the narrow corridor leading to the office, a slender man came to meet the visitor.

"You are punctual, Monsieur Vacarescu. How was the trip across the mountains?"

"No circumlocutions, if you please, Monsieur Suchinow! I do not enjoy idle conversation when it is a matter of business."

The reproofed man remained silent. He knew the peculiarities of the fat little financier and yielded to them.

THE two men entered the office, a comfortably furnished room, the thick walls of which muffled the noise of the workshops; the incessant hum of the high frequency generators operating close by was noticeable only because of a slight trembling of the walls and furniture.

"How far along are you?" asked Vacarescu, curtly, sinking back into a chair with a sigh.

"Finished!" replied Suchinow, still more curtly. On his face, which was strangely dotted with green spots,

lurked the shadow of a contemptuous smile.

"Finished except for . . . ?"

"Except for nothing!"

"Do you really mean that the rocket can now be released at any moment?"

"Tomorrow evening at nine twenty-five sharp (Central European time) it must be released, unless I want to loaf around thirteen days more until the next quadrature* of the moon."

The fat financier seemed to have had his breath taken away. His surprisingly narrow hooked nose, which seemed entirely out of place on his fat broad face, trembled as though threatening to fall off.

"And I? And our company?" he snorted.

"Yes, you must certainly hasten, if the Transylvania Company is not to get ahead of you at the last moment!" remarked the slender man pleasantly.

"You have a nerve!" exploded Vacarescu angrily.

"No idle conversation, if you please, Monsieur Vacarescu! It is a question of business. We can be finished in a few minutes. The contracts are ready. Have you deposited the money?"

"I am going to protect myself. First, this matter of the Budapest account does not suit me. If the rocket does not return, I lose my money for nothing. Now tell me, who is to steer the thing?"

"Skoryna—you know very well."

"Do you really expect me to settle a fortune on this untried lad with the peaches and cream complexion?"

"Sir," replied Suchinow sharply, "you must certainly entrust all these arrangements to me, whether for good or ill."

*The moon is in quadrature when a line drawn from the earth to the sun to the moon makes an angle of 90 degrees. Suchinow evidently did not want to travel directly toward or away from the sun.—Editor.

"For my money I can probably demand some guarantee, too!" said the irritated Vacarescu.

"Does not Skoryna guarantee matters with his life? What further guarantee do you wish?"

"Bah! a valuable life for twenty thousand English pounds!" jested the financier maliciously.

A shadow crossed the green-spotted face of the Russian.

"Can one balance a human life with money, Monsieur Vacarescu? Even the life of an—an engineer like Skoryna? I beg of you to regard the discussion of this point as closed."

"At least, your preparations have remained secret?"

"Certainly, so far as is humanly possible. Of course the press notices and the information for the Lick and Babelsberg observatories are already prepared. The radio announcements are to be sent out immediately after the signing of the papers."

After a short pause Suchinow suddenly asked:

"Why do you set such store by absolute secrecy?" He looked slyly up at the man opposite.

"I should not like to have this fellow—what is his name, anyway?"

"August Kort."

"Right! I do not want this Kort to take a hand in our game. I trust he knows nothing about it."

HOW should he? After all, what harm would it do? He has not yet finished his first experiments, and he could hardly make up my head start. By the time he can think of competing with us, we shall long since have set the world in an uproar and your foundation will be established solidly. Do you doubt that?"

Vacarescu thoughtfully twirled his watch-chain.

"I cannot help thinking that he will somehow upset our calculations."

The inventor grew pale. Anxiously he examined the expression of the financier, and he nervously drummed on the arm of his chair.

"How so?" he asked with forced indifference.

"Do not underestimate this rival! You know that he invented the rocket at about the same time as yourself; he knows the dynamic cartridge; and lately he has been asserting that he can attain twice as high a repulsion-speed by using liquid explosives. Some day this man will come into the open with some startling revelations, and then you and I are in the soup."

At these words, offering no interpretation but the speculator's anxiety about his investment of capital, the tension in Suchinow's face was released.

"I see perfectly well, Monsieur Vacarescu," he said calmly, "that you have so little confidence in me and my—in Skoryna, that it is doubtless best for us to break our relation and for the Transylvania Company. . . ."

"For Heaven's sake!" interrupted Vacarescu, almost screaming at him. "You shall have your deposit! But the Lord help you, if we fail!"

With a smile bordering on pity Suchinow lifted the telephone receiver.

"Connect Monsieur Vacarescu with the Bucharest Bank of Roumania—yes, the president himself—very well, then call up here."

Then he opened the door of a little cabinet built in the wall, took out some papers, and spread them over the table.

"Here, Monsieur Vacarescu, is the transfer of license, here is my appointment as general director of the Transcosmos Stock Company, here is the sealed envelope with Skoryna's will of the twenty thousand pounds, due from the Budapest account in the case of his death, likewise the state-

ment of your message to the Bank of Roumania (which you yourself will telephone in a few minutes)—and here is ink!"

CHAPTER II

UNCLE SAM

A SUNNY day of late summer was ending. The light wind which at noon had ruffled the surface of Lake Conway was ceasing, and the last dying waves were splashing on the shore.

Far out on the lake shone in the rays of the evening sun the dazzling white sails of a little yacht. It seemed motionless. The main boom swung back and forth at random, the foresail hung down limp, and the tiny current of air could not even keep up the pennant at the mast-head.

The steersman attentively viewed the horizon and the little white clouds that swam over the Alps, glowing in the sun.

"After sundown there may be a breeze again," he said to his companion; "we now can only choose between waiting and rowing. What do you think, Uncle Sam?"

"I think," replied the latter, "that we have time to wait. If the evening breeze fails us, we have at worst lost a couple of hours—or gained them, my boy! Such a splendid evening calls for enjoyment."

The helmsman rose, secured the tiller and sheet, and made himself comfortable on the forward deck.

"Just see what a festive cloak the mountains have put on to receive me. Truly, old Zorona yonder is blushing for joy that old Sam has returned. Lad, how beautiful our home is!"

"It is true, Uncle. But can all this still impress you, a man who has hunted in the jungles, meditated beside the Ganges, and frozen in Tibet. Can our poor little Zorona still seem striking

to you who have seen Mount Everest rise into space?"

Uncle Sam slowly and thoughtfully filled and lighted one of his pipes, which he always carried with him in large numbers, projecting from all his coat pockets. Then he inhaled deeply, so that there was a gurgling within the beloved pipe; he blew a mighty cloud of smoke into the air and said, as soon as this busy occupation gave him time:

"Everywhere in the world there are beautiful and noble things, Gus. Yet it is always a matter of the relation in which you stand to them. See, this Everest you spoke of: you look at it, and at the same time you realize that it is the highest point on earth—it is unfortunate that this is known—you reflect about the nine thousand meters, reckon and consider—puzzle your memory over all the trifles you had in school concerning this marvel of a mountain—and by the time you have successfully digested all this, you have travelled on. And you have not even become acquainted with the proud king who sits at his record height and with cool graciousness waves farewell to you from afar.

"But our Alpine range here, with yonder the abrupt descent of Zorona and across the lake to Fanner these are no record-seekers, only dear old friends whom I well know. Isn't that so, old fellows? You still remember your old Samuel Finkle!"

In youthful exuberance the man of fifty waved his hat in greeting to the mountains of his home.

"See," he went on, "it is so with everything. There is nothing in the world of which one can absolutely say that it is good, it is beautiful. It is always a question of good and beautiful for whom—that is it."

Reflectively he spat into the water in a great arc.

"As long as your dear sister was still alive, I never thought of leaving our Alps. But when she fell—well, you know all about it—when he had buried her, then I cursed the mountains; I could no longer bear to look at them, and I went to India to the jungles. But that is long ago, and I have pardoned the mountains for not watching over her better."

Then both lay silent, close together on the slightly rocking deck, listening to the lapping of the tiny waves on the side of the boat and letting their glances sweep into the greyish blue infinity.

August Kort, the famous chief engineer of the national airport in Free-town, pressed his uncle's hand sympathetically. In reality the little man beside him, all dried up by the tropic sun, was not his uncle but his brother-in-law, and Dr. Samuel Finkle owed his position as "uncle" only to their noticeable difference in age.

"Uncle Sam," said Kort after a while, "better dead than—than lost!"

"What! You also?" In surprise the old traveller looked up.

"No, no, Uncle! It was only an idea!" protested Kort.

A QUESTION OF ASTRONOMY

THE sun had set. The sky was growing darker, and in the south-east Mars already glowed with its reddish light. Venus, the evening star, pierced the golden yellow glow of the western horizon; gradually the two Dippers lit their torches, and the "W" of Cassiopeia rivalled in splendor the sparkling starry cross of the Swan.

"Gone and carried away!" the engineer broke the stillness. "The evening breeze is not yet stirring!"

"That's the mischief of it!" said Uncle Sam in comical excitement. "You claim to conquer the universe and you cannot even conjure up a little bit of

ridiculous terrestrial wind, which we need for the trip home."

Kort smiled. "Perhaps it is easier to rule space, the absolute nothingness, with its rigid laws, than the 'ridiculous terrestrial wind,' which is dependent on a thousand influences. In space it is calculation alone that conquers."

"Are you so sure of this? Do you think that chance is entirely excluded in the universe?"

"What is chance? Is there really chance, or is it not in the last analysis a phenomenon the laws of which at present still escape our knowledge? Surely it can safely be assumed that the possibility of uncalculable phenomena is reduced to a minimum, so that (strange as it may seem) human knowledge controls space better than it does numerous phenomena on our little earth."

"But this minimum may suffice to shatter all your plans." Dr. Finkle energetically drew at his pipe. "How closely defined are the limits of our life! A change in temperature of a few degrees is sufficient to cause death. On the tiny layer between the glowing center of the earth and heatless nothingness of space live man, beast, and plant; it is merely chance which has left it exactly this space for the possibility of life. It is a trifling fact on which our life is based, and only an equally trifling impulse is needed (for which your 'minimum' easily leaves room enough), in order to destroy it—to blow out with a breath an insignificant little human being who rashly seeks to leave Mother Earth."

"Granted, Uncle Sam! Just such an opinion was once expressed by the city council of Newburg, when the first railroad to Firth was to be built, yet today the express trains speed from Paris to Stamboul.

"Shall I stop because of this mini-

mum in the possibilities of failure? Shall I destroy my invention, because it perhaps is not yet perfect? Shall I withhold from mankind a considerable advance in knowledge, because it may perhaps lead to disappointment?"

"Gus, you misunderstand me. Believe me, I admire you and your work, which I hope you will soon show me. But I doubt whether this constant advance in external knowledge is a blessing for mankind. Do you believe that motorists and aviators of the twentieth century are happier than the subjects of Frederick the Great, for whom a journey from Brandenburg to Cassel was an event prepared months in advance—a real experience? Who has such experiences today? Will not external knowledge celebrate its triumph at the cost of inner knowledge—and then shall we have gained anything? I dread outspreading civilization, if it destroys concentrated culture."

KORT did not reply, and for a while old Sam was also silent, knocking the ashes from his pipe on the side of the boat.

"Do you believe that man-like beings inhabit the stars?" he then asked very suddenly.

"Hardly; that is, I do not know. On the eight known planets conditions prevail which exclude the existence of living albuminous cells. The only planet whose temperature and atmosphere offer any possibility of vegetation and accordingly of life is Venus. But all investigations and observations indicate that no rational beings live even there. And of the planetary systems of the so-called fixed stars we know nothing or practically nothing."

"I will tell you something, Gus. You engineers and scientists are extremely clever persons, but somewhere in each of your brains is a gap. You can calculate until a person gets dazed,

but thinking is something that you cannot do."

"You are exceedingly complimentary, dear Uncle!" said Kort with a laugh.

"Well, please give me a single valid reason—valid, you understand—why among all the millions of worlds the little clump we call earth should alone be selected to have the heritage of life and reason! Well?"

SAMUEL FINKLE did not seem to expect an answer. Rolling over on his side, he took from his trousers pocket a new matchbox, twirling it in his fingers, which resulted in splitting a joint of the box. He continued his remarks:

"It is megalomania to believe that! At least now, after science has robbed our earth of its ancient position as the motionless center of the universe and has assigned it the modest place of a planet circling about the sun."

"Of course you do not venture to disturb the eminent position of the sun, do you?" said Kort, amused by his uncle's zeal.

"Of course the sun must revolve about some central star or other, in my opinion Sirius, and the latter again about something more central, and so forth."

"Then you do grant a certain order of rank, Uncle. Central, more central, still more central, most central of all. . . ."

"With you mathematicians a fellow cannot speak a sensible word. Are you trying to make a fool of old Sam?"

"No, Uncle." Kort became serious. "But one thing is certain: the earth does not revolve around the sun, any more than the moon revolves around the earth. It only seems so."

"It only seems so?" Uncle Sam's pipe had almost fallen from his mouth in his surprise. "Do you know, Gus, things cannot so easily amaze an old

globe trotter like me, but I am exceedingly amazed that you should mock your good uncle this way!"

Having spoken, he rolled over on his side, evidently hurt and firmly resolved to regard the conversation as closed.

"Just think a bit, Uncle; you can do it better than I! Where would your theory be with regard to the equality of the stars and consequently the rational beings living on them, if you allow the sun the rank of a central star? I only want to confirm and supplement your theory. The universe is more democratic than you think."

Already old Sam broke his resolution and condescended to call back over his shoulder: "What the devil does the earth revolve around, if not the sun? Are you accusing old Kepler of lying?"

"Around a point, Uncle; around the same point as the sun itself, around the common center of gravity, which on account of the immense mass of the sun lies so near its center that we may well pardon this slight error and calmly pass over it. Won't you be kind enough to turn back again?"

"Then I am right, am I not?" said Sam, making a half-turn.

"Surely, Uncle! On other heavenly bodies there may well be rational beings. But as long as it is not proved, we must leave the question to philosophers and novelists. But look! The evening breeze is coming!"

Quickly he released the tiller and sheet. On the greenish black surface of the lake appeared bright trembling streaks, coming nearer and nearer, precursors of the expected breeze. In a few seconds it reached the yacht, inflating the canvas and making the loosely flapping jib crack like a whip.

"There, Uncle Sam, this will be a speedy return trip. Look out, I am going to tack!"

The bow cut through the waves, casting up the spray; the wind sang in the shrouds; before the lake sank into complete darkness, the yacht was rocking at its buoy.

BLUFF OR REALITY?

IN the pure sea air of California, at a considerable height above sea level, stands the great Lick astronomical observatory enjoying, more than any other, especially favorable conditions for the observation of the northern sky. The dustless air permits the use of such great magnification that the aged observer, Nielson, chose as the special field of his researches the exact study of the surface of the moon. Nielson was also considered the chief authority in the observation of the little planet Mercury, visible only in the uncertain half-light of evening or morning.

On the evening of the sixth of September the aged scientist was startled out of his calm and peaceful contemplation of the magnificent surroundings by an amazing radiogram. Carefully he studied the dispatch, uncertain whether he should regard the message as serious or as a poor jest.

"What do you think of that?" he asked his assistant.

"Suchinow — Suchinow!" replied the latter. "That must be the Russian who caused so much excitement by his work on the conquering of space by means of rocket propulsion. Do you remember, sir? He claimed that he had solved the problem and that he could actually carry out his plans, as soon as he had at his disposal a propulsion material with a latent chemical energy of about 60,000 calories per kilogram. When his experiments at that time always failed, the matter was regarded as mere fantasy. Perhaps he has now really found a sufficient source of energy."

Shaking his head, the old astronomer reread the telegram:

"September 7, 9.25 P.M. Central European Time, Suchinow moon rocket leaves 45° 16' 40" N. Lat., 24° 34' 30" E. Long., Greenwich. Observations please, Transcosmos, Bucharest."

"According to our local time that would be to-morrow afternoon at one," said the assistant. "By day we can hardly see much."

"Still less at night, if the rocket is not sufficiently illuminated," answered Nielson. "Do you really believe it at all?"

"It is not impossible. If the Russian has an energy accumulator of sufficient capacity, the matter is hardly to be doubted; spatial navigation has thus far failed only on this one account."

"Man, do not tempt the gods," murmured the aged astronomer into his grey beard. Then he said aloud: "Make the necessary preparations and have the observatory ready at any rate by six o'clock to-morrow afternoon. Before that we can hardly expect to make an observation."

In spite of his great doubt of the success of the enterprise just announced, Nielson spent the night in feverish excitement.

"Shall I live to see it," he thought, "this marvel of man's leaving the earth and rashly peeping behind the moon?"

Then there awoke in him the interest of a scientist who had devoted a whole life to his research. At last mankind was to receive enlightenment and certainty regarding the appearance of the part of the moon which had been hidden from the earth for thousands and millions of years! The fabulous three-sevenths of the surface of the moon, about the nature of which there was no explanation but surmises and

hypotheses: very plausible, indeed, but mere hypotheses after all!

The apparently inexplicable mystery was about to be solved, and he—Nielson—need not take the question unanswered to his grave.

THAT night he did not close his eyes. In excitement he ran back and forth between his study and the giant telescope in the dome. Then he went down the steps of the tower and walked about in the open.

The moon shone in its first quarter through the pure sea air. It seemed to be laughing at the stir which human beings were making about its hidden side.

Nielson became thoughtful. He knew very well the problem of the space ship, which years ago had been widely published in all the papers and had then sunk into oblivion, since there could be no practical solution in view of the lack of a proper fuel. Likewise he did not regard it as impossible to send a shot from the earth; but could a man withstand the fearful initial acceleration? What was the use of a space ship without an observer? The radiogram had given no information on this score.

What if it were only a bad joke which he was taking as something serious?

Slowly the night went by, still more slowly the following morning. It became afternoon. Now, at this very moment, the shot was taking place, provided the news was correct. Nielson could hardly conceal his excitement any longer.

The hours dragged by. On some pretext or other he busied himself in the dome where the assistant, on the movable platform, was sitting in readiness at the eye-piece, constantly observing the eastern sky.

"I see nothing yet, sir!"

Evening set in, and still the report

of the observer was the same: "I see nothing yet, sir!"

Was it possible that some joker....? But Nielson said to himself that by daylight an observation was scarcely to be expected; the shot naturally could not be very large, and the presumably very high angular velocity must quickly take it from the observer's field of vision. By night, however, perhaps they could see the rocket with the naked eye, assuming that it radiated a strong light, and could point the telescope accordingly.

Nine o'clock approached.

"We are now in the same relative position to the sun as at the starting point of the rocket at the time of the discharge. Now it must be visible, if it is illuminated, provided it was sent at all." Nielson climbed the ladder to the observation platform, to relieve his assistant. With trembling fingers he turned the eye-piece, to adjust it to his old far-sighted eyes. The mighty tube was almost vertical, for by now the rocket had to appear somewhere near the zenith.

Vainly he scanned the heavens. Time passed; morning approached; nothing!

But wait! A cry of joy escaped the aged scientist. There on the firmament was a glowing streak. In a loud voice he called the assistant.

"Is it visible, sir?" asked the latter hastily.

"We have been swindled, after all!" replied Nielson, disillusioned. A meteor had tricked his fevered imagination. He left the observatory, utterly exhausted.

CHAPTER III

KORT HEARS THE NEWS

COUNCILLOR HERST, the director of the national airport at Freetown on Lake Conway, was sitting in his private office and turning

the leaves of a heap of newspapers. One item in particular seemed to hold his attention. Hastily he threw away his cigar and pressed the button of an electric bell.

"Please send me Chief Engineer Kort at once!" he said to the clerk who answered the bell.

In a few moments appeared the man sent for, a broad-shouldered blond fellow, the technical brain of the Victoria airport.

"My dear Kort," the director greeted him heartily, "I must unfortunately give you some bad news. Please sit down."

"You know," he went on, "that we cannot carry out your project until we have the necessary money at our disposal. My visit to the government to establish a suitable credit has unfortunately met with no success. We may absolutely give up hope."

"Then I must simply turn to the public, councillor!" said Kort calmly. "The masses will have more understanding than the narrow-minded parliament."

"Do not hope for too much!" interjected the director thoughtfully.

"Let the director recall the Eddington catastrophe, when Count Eplin's dirigible came down in flames and was destroyed. In spontaneous recognition of the greatness of Eplin's work the people opened heart and purse, and in a few weeks millions were at Eplin's disposal. And to-day it is a question, not of controlling the air but of conquering space, the universe."

"You are an optimist, my dear Kort!" replied Herst. "The public is as yet too little acquainted with you and your work. Your invention is not trusted, and—believe me—the people give no money without assurance of success, especially in this general shortage of money."

"Exhibit your space ship to the pub-

lic, travel in it to the moon, with a safe return; then, indeed, you may have any sum to build further models."

"This is just the tragedy of many great inventions! First success, then money! And if success is impossible without money, the finest thing sinks into oblivion."

"You are looking at the dark side of things, councillor!"

"What do you estimate as the lowest possible cost of the first ship?"

"From eight to nine hundred thousand dollars will suffice. A still smaller and cheaper model is unfortunately impractical. One would think that this sum could be collected. Just ten cents from every wage-earner would be enough. If the nation realizes what the question is, it will gladly sacrifice a few cents."

"Yes, if the nation realizes. But it realizes only what it sees. And then, one more thing: you are too late. The Russian is already at the goal."

"What Russian?" asked Kort absently.

"You surely remember the Suchinow publications of two years ago, in which exactly your idea of the space rocket was worked out. . . ."

"Oh, yes! I know. He only lacked the principal feature, the dynamic cartridge!" said Kort with a laugh.

Director Herst excitedly turned the pages of the newspaper.

"It is not so harmless as that! The man seems to have invented the dynamic cartridge or an equivalent substitute. Here, read this!"

Quickly Kort seized the paper. On the first page, in heavy type, running the entire width of the page, he read:

"The shot into infinity has become reality. The following startling radiogram has just arrived:

" 'Bucharest, September 7, 11 P.M. To-day at 9.25 P.M. start of Suchinow

space rocket from Calimanesti to moon. Further news follows.'

"We give this report with reservation. A confirmation of the news is awaited. As we fully reported in No. 47 of last year, Dimitri Suchinow of Little Russia about two years ago conducted the first experiments. . . ."

Kort read no further. His eyes flashed.

"Can the Russian," he murmured, "also have discovered the dynamic cartridge? Strange!"

Shaking his head, he studied the article to the end.

"Well?" asked the councillor.

For a time Kort did not reply; then he said slowly: "I do not know what propelling force Suchinow is using for his rocket. One thing is absolutely sure; if it does not attain the necessary exhaust speed of at least 3000 meters a second, the Russian will not reach the goal. And I think I can correctly state that this performance can be surely attained only by my new machine with liquid fuel. If Suchinow, as is very probable, is operating with solid explosives of the type of the dynamic cartridge, he will not lift his machine above the field of attraction of the earth, or else . . ."

"Or else?"

Stressing each word, Kort completed his statement: "Or else he will pass the limit of the earth's attraction by using up the last supply of energy, but then he will never return."

"A frightful thought!" groaned Herst.

"Unfortunately a warning would already be too late." Kort took up the newspaper again. "The rocket ascended last night."

"Even if it were not too late, it would not help. Do you really believe that an inventor would seriously consider the warning of his rival? Fancy his letting himself be induced to aban-

don his enterprise with the goal in sight! Such a warning would also be thought by the public the maneuver of a rival and would expose you to ridicule without helping anyone. No, it cannot be done at all."

"There still remains the hope that Suchinow has simply released an experimental rocket without occupants. The report certainly does not mention any passengers. But what benefit will astro-physics derive, if a lifeless machine is sent up without an observer, or if the observer does not return alive? Either way, the shot into infinity is an interesting experiment but nothing more, and it will end in a fiasco."

"So much the worse, if the Russian fails!" cried Dr. Herst. "Then public opinion will be aroused and we shall have no success at all in collecting money for an apparently discredited affair, the hopelessness of which will appear established by this mishap."

"My plan is not hopeless and cannot be discredited by Suchinow's presumable mishap," replied the inventor firmly. "I sincerely beg you, councillor, to start a public drive for funds. I trust the judgment of the nation. And now may I be excused? A visitor is waiting for me in the laboratory."

"Incorrigible optimist!" grumbled the councillor, when Kort had gone. "He does not even wonder whether this drive for funds will be sanctioned!"

TO MOTHER BARBARA'S

APPARENTLY unconcerned, Kort hastened to his laboratory, where Uncle Finkle was already awaiting him impatiently. In one hand the newspaper, in the other his inevitable pipe. Sam ran to meet his brother-in-law, gesticulating and shouting from halfway across the room, so that his voice broke:

"Have you read it? There is a race for the moon! The Russian. . ."

"Apparently has money!" interrupted Kort. "That is his only advantage. Yet he will get to the moon with money just as little as I shall without it."

"Well, the question of money is not so difficult. Just sell some licenses." With a roguish wink he nudged his friend.

"Licenses?"

"Of course! The simplest thing in the world! Mampe will pay you a pretty penny for the sole right to install saloons on the moon. Don't you think so?"

"It is too bad that apparently there is neither tobacco nor wood on the moon, or I should gladly give you the tobacco pipe monopoly!"

"Thank you very much! Unfortunately I have no use for it. I intend to end my days here on earth. But, joking aside," added Sam sorrowfully, "it is cursedly unpleasant about this rocket. Where did the fellow get it?"

"It is nothing remarkable," answered Kort calmly, "that the very same discovery should be made at the same time by different persons who have no connection. The usual duplicity of events! Besides, this Suchinow came before the public with the project of spatial navigation somewhat ahead of me."

Angrily Sam knocked the ash from his pipe.

"The devil take the entire rocket business, for all I care!" he grumbled. "But if people absolutely have to travel to the moon, then I think it need not be granted to a Russian to be the one who wins the laurels."

"He is not there yet, Uncle!"

"I hope he breaks his neck! I must dissolve my anger, or I shall burst. Come, lad, let us go to Mother Barbara's for a pint. . ."

"Don't you want to see my experimental model?"

"That would be bad, Gus, very bad! With this wrath inside me? Impossible! The only help is a good drink. Trust old Sam; he knows the things of this earth. When I was just a lad, I often found consolation for my bad lessons by going to Mother Barbara's."

Firmly he took his resisting brother-in-law by the arm and led him away.

IN the narrow drinking room of Mother Barbara's inn guests were already sitting, in spite of the early afternoon hour. They were disputing loudly and eagerly about the great event of the trip to the moon.

"The attempt ought to fail," burst out a stout grain merchant, striking the table with his fat hand, so that the glasses clinked. "It's a real shame that a fool of a Russian is getting to the moon ahead of us people of Freetown. Who built the first airship? Who flew over to America? We did! And who started this whole business of travelling to the moon? We people of Freetown. And now are we going to look on? That is not right, no, it isn't!" Hurriedly he emptied his glass.

"It is terrible, terrible as the devil!" affirmed his neighbor thoughtfully.

"Do you remember," went on the merchant, "what a stir it made when the CO-1 flew across the ocean, when the whole world looked at us here in Freetown? And now the moon and the stars would be looking at us, too, if Kort had hurried a little more. Isn't that so?"

"Perhaps Kort sold his invention to the Russian," whispered his neighbor behind his hand, moving a little closer. "We don't know!"

"Don't talk nonsense! Kort giving his business to a foreigner! You don't

know him! No, Kort wouldn't do things like that, and now he has invented something quite new, very much better."

"Then why doesn't he build such a ship, eh? Why does he let the Russian fly off and just look on?"

"Well, he put in all his time and ran out of money."

"But look here, this Russian has done it. I don't know, but the whole thing doesn't look good to me."

"Look here," interrupted a third. "This whole Suchinow business is just a swindle? Have you seen the rocket, or has anybody else seen it?"

"Not that I know of!"

"But we could see it flying to the moon. We see the moon all right!"

Busily Mother Barbara ambled around among the tables. She hardly had a chance to stop in her filling the glasses. It suited her nicely. She rejoiced at every event which could excite the people of Freetown, because excitement causes thirst, and thirst must be quenched. She enjoyed nothing so much as seeing empty pint steins before her guests.

Suddenly the conversation at the head table ceased; two new guests had come in. Inquisitively the people looked at the couple, well known to all Freetown, persons especially noticeable on this day of days.

"Good day to all of you!" said Uncle Sam jovially. Kort merely nodded absently and took a seat at a table in the partitioned corner behind the buffet.

"Yes, old Sam is still alive, too!" was the greeting of the fat old landlady to the friend of her youth, and she fairly beamed with joy at seeing him again. Without waiting for the order she set two glasses of old wine on the table and then began a very lively and extensive conversation with Sam. The inquisitive guests at the head table, who were hoping to learn

all sorts of things about the moon episode, soon turned away disappointed and bored, beginning again their interrupted dispute, first softly, then louder and louder, with an incessant flow like a mountain torrent. Only an unintelligible confusion of voices, occasionally interrupted by heavy pounding on the table, came through the thick clouds of tobacco smoke.

Kort sat silently in the corner. The newspaper announcement occupied his mind still more than he showed. What kind of energy accumulator did Suchinow possess, that he should venture to despatch the rocket? Would this event harm or help his own plan? Would the rocket really reach the moon? Above all, was there an observer in the machine, and was he still alive? The evening paper would surely bring more news. Besides that Kort did not think it impossible that the rocket would be visible this evening. As to seeing it with the naked eye, that he certainly considered doubtful.

"A splendid woman, this Mother Barbara!" said Uncle Sam, when the landlady had again turned to the head table, rousing Kort from his reverie by the words, "She outlives generations, and her wine is splendid. Here's to your health, lad!"

THE DISASTER

SAM raised his glass to the level of his eyes, swung it a few times in a circle, sniffed the fragrant liquid, took a little sip, and smacked his lips. His lower jaw trembled like the throat of a tree-frog waiting for a fly. He sniffed again and took another drink. Thus it was a long time before the old *connoisseur* set down the glass again, wiping his mouth and uttering a deep sigh of content from his very soul.

"Now I am more in the mood, Gus; just fire away, what do you think of

this new thing? It's probably a swindle, isn't it?"

Kort shrugged his shoulders.

"Who could be interested in exciting the world with such false news? It is rather late in the year for an April fool joke of this kind!"

"Just tell me directly, Gus, why your work is progressing so slowly that someone else could get ahead of you?"

"There are various reasons, Uncle Sam. Two years ago I had already made considerable progress in preparing the rocket. I had put in all my available capital. And then came the catastrophe!"

"That is right. You wrote me once about a great fire. I was then in Bombay. How about this catastrophe, anyway?"

"Somehow the small supply of my dynamic cartridges seems to have taken fire spontaneously. Maybe there was a short circuit. At any rate, they exploded in my laboratory, luckily when nobody was there. Not much remained of my work, you may well imagine. My assistant, a Hungarian student, came near losing her life in the flames. The reckless girl wanted to rescue the box of construction plans from the fire. It was crazy, with the incessant explosions. I tell you, Uncle, my heart stopped beating when I saw Natalka plunge into the flames. I thought she was lost; I raged at the firemen who refused to follow me into the fire to save Natalka."

Kort remained silent for a while.

"Did you save her?" asked Uncle Sam, much interested.

"I did not find her. How I ever got out of that flaming inferno again is a mystery to me to-day. Later I was told that I was found unconscious close to the fire. For days I lay between life and death. All my life I shall bear the scars of my burns."

"And Natalka?"

"Fortunately she recognized in time the hopelessness of her mad attempt and plunged into the lake with her clothing all on fire. That saved her. She escaped with the loss of her splendid long hair. I shall never forget this courageous helper, although. . . ."

Kort did not finish the sentence.

"Although? Why, what did she do to you, Gus?"

"Oh, nothing! She remained here a few weeks more and helped me very much in reconstructing the dynamic cartridge. The fire had destroyed all my supply."

"And then?" asked Sam stubbornly.

"And then? Then she asked for her release. I could not keep her."

"So that was the way," said Sam, and he slowly repeated the words, "she asked for her release." He seemed to be thinking of something other than what he said.

"Speak up, lad!" he remarked after a few minutes, while he refilled his pipe. "Isn't it striking that this Natalka went away so suddenly and without cause, only a comparatively short time after the fire?"

"Without cause?" Kort laughed bitterly. "Without cause? Natalka is now living in Boland as the wife of the apothecary Martin; maybe right now she is a charming mother!"

"Oh, that's how it is!" said Finkle, whistling through his teeth; he was reflecting. Poor Gus, he thought. Then he said aloud:

"I thought you were going to tell me more about your invention than about the fate of your assistant."

"That can be told in a few words. I had to start again almost at the beginning, and quite by chance I hit on the combination of gases for fuel on which my new model depends. If the airport had not occasionally given me a little help from the surplus funds,

I might calmly have buried all my hopes after the fire. Now I have made so much progress that I can build the first practically serviceable space ship as soon as I can get the necessary capital. That is terribly hard at present."

"And foreign capital?"

"That has been offered me several times."

"Well?"

"Uncle Sam, I would rather destroy my whole invention than let this, too, go to some foreign country. No, Uncle, my space ship must and will remain a national affair."

"The trick of this Suchinow is all the worse!"

SAM again carefully sipped his wine, looking intently at his brother-in-law over the edge of the glass. He remarked quite without any previous connection:

"Do you still correspond with Nataalka, that is to say, Mrs. Martin?"

"She writes to me off and on, telling about her household affairs. The former student seems to have become a model housewife!" replied Kort drily, drawing spiral figures in the ash tray with a match. "Of course I send her a few lines off and on, too; but she never speaks of my cares and plans. Naturally! She has quite different interests now!"

It did not escape Uncle Sam, with what warmth Kort spoke of Nataalka and how indifferently of Mrs. Martin.

Gus, Gus, he thought, you seem to have scorched something besides your skin in that fire! But another idea passed involuntarily through his mind.

"Gus," he began, "do Nataalka's letters actually come from Boland?"

Kort looked up in surprise. "What a strange question!"

"I only thought it somewhat unusual that a Hungarian student should marry a druggist."

"Well, chemical knowledge may be useful to a druggist's wife," said Kort bitterly, pulling a battered envelope from his pocket. "There, see for yourself! You may perfectly well read the letter, which I got only a few days ago. It is no love letter, such as is kept from profane eyes."

Sam took the letter. "Too bad it isn't, Gus; isn't that so?"

Kort paid no attention to this remark. "Besides, I have met Martin myself. The young couple visited me once after the wedding."

"He didn't impress you much, this Martin?"

"Good Lord, he isn't a hunchback!"

Sam carefully read the letter. In firm and almost masculine characters it stated that the writer was very well, that Mr. Martin was a model husband, that the "Angel" drugstore did a fine business, that this settled existence that though their work together in Freetown was a pleasant memory, woman's place was not in scientific work but in the home, and so forth.

"The only thing missing is some recipes!" mocked Sam.

"Uncle Sam!" cried Kort reproachful and injured.

"Lad!" said Finkle, rising gravely. "I know and understand; this Nataalka has made a fool of you. Everybody has his youthful fancies, and no one can say anything against them. But Gus, a woman who writes such silly meaningless letters—why, Gus, such a woman is not worth one hour's thoughts from a man like August Kort. I must say so, Gus! And if to rescue the honor of your adored one you think you have to take a pistol shot at old Sam, well, please go ahead!"

With a mighty swing of his arm he

threw the letters on the table, striking the paper with the fist which firmly held his pipe, so that a rain of ashes and burning tobacco poured over the table. He must have been greatly excited to subject one of his beloved pipes to such an unaffectionate treatment.

Kort shuddered; then he said in an aggrieved tone: "I cannot contradict you, Uncle. If I did not know Natalka's handwriting so well, I could not possibly believe, good heavens, that Mrs. Martin and my—my assistant were one and the same person!"

Dissatisfied, Sam cleaned up the table, testing the mishandled pipe and knocking the ashes from the letter. The postage stamp had fallen from the envelope, and he tried to stick it on again—mechanically, as though trying to remove all signs of his outburst of anger.

Suddenly he stopped, held the envelope under the light, examined it with first one eye and then the other, and shook his head thoughtfully. On the place where the stamp had been stuck was written in pencil "30/8".

"Strange," murmured Sam, "to write the date of the letter under the stamp!" Then he took up the letter again. It was dated August 30, which agreed with the pencilled date. The Boland postmark had the same date.

Then his wrinkled face lighted up; a sudden idea seemed to brighten him, and contentedly he again surveyed his wine glass.

Well—the letter was written by Natalka and posted by Mrs. Martin in Boland on August thirtieth. But. . .

He put the envelope into his pocket, on the reverse of which was the sender's address, returned the letter, and said, ignoring what had just occurred:

"Then money is what you lack! I shall just see about that a little. Old Sam knows many people. Who knows,

perhaps I can be helpful to you in this respect. Tomorrow I must be off to the Turkish Consulate in Boland, and I shall keep the matter in mind.—Mother Barbara, bring me another of the same!"

A SLEEPLESS NIGHT

IN the streets and alleys of the usually very quiet little city on Lake Conway it was lively the next night. When darkness set in, the people poured out to the lake in crowds. The entire city, to the last man, seemed to come out. They crowded about the boats which were for hire, the owners of which were doing splendid business. Recognizing the demand, they made a special increase beyond the ordinary rental fee. As far as one could see in the darkness, there were canoes, rowboats, and any kind of thing that would float on the water. With telescopes and opera glasses the people unceasingly scanned the sky with an attention such as had hardly likely ever been given the old moon in this district before.

The evening papers had confirmed the sending of the rocket, and no dweller in Freetown was willing to let this event escape him, though opinions regarding visibility and invisibility were very divided. On this evening many saw perhaps for the first time that most of the stars, like the sun, rise in the east, climbing higher and higher in the firmament, to sink again to the western horizon. Many noticed or learned, to their astonishment, that the pole star, on the contrary, seems to stand still, while the entire starry heaven revolves around it.

But when the hours passed and nothing at all sensational occurred, no arc of fire in the sky, no glowing, speeding shot, no explosion on the moon, then gradually the older per-

sons began to go home disappointed, others followed, and all at once commenced the general migration back to the city, though morning was still far off. Only the more stubborn ones held out until the grey of morning, until the rising sun colored the eastern sky and extinguished all the splendor of the stars.

On the next morning the papers brought reports columns in length. All the reports, including those from other countries, showed a certain disappointment that nothing could be observed; yet there was scarcely any doubt that the shot had actually taken place. A leading Boland paper printed the description by its Roumanian correspondent. To be sure, no one had actually seen the shot, but in the night in question, soon after nine o'clock, the dwellers in the vicinity of Calimanesti had waked in fright at a loud thundering crackling sound like machine gun firing. In great excitement the Roumanian mountaineers, who could not understand the frightful noise, had fled down the valley. The cattle had become unmanageable, horses and oxen had broken loose, increasing the general confusion, added to which was the incessant howling of the dogs, while the mountain beasts, heedless of men and dogs, had fled through the villages in wild terror.

The thundering had also been heard in the great hotels of Ramnieul Valcea, and some of the guests claimed that they had seen a dazzling light over the mountains to the north-east.

Most of the observatories which had been asked for information about their observations and opinions assumed a very cautious and reticent position.

The Williams Observatory, Boland, wrote as follows:

"Until we are informed regarding

the dimensions, velocity, and direction of flight, we can form no opinion regarding the possible visibility of the rocket. It is, however, certainly striking that up to now the rocket has not been perceived by any observatory in the world."

The Greenwich Observatory, reporting to the *Daily News*, offered rather more hope:

"... Still it is possible that the rocket is illuminated insufficiently or not at all, for which reason it can only be seen when it emerges from the shadow of the earth. We can make no prediction when that will occur, since we have no basis for calculation."

Even the following night brought no certainty, since a thick covering of clouds had formed over the entire Western Europe, and the commencing autumn mist alone was enough to make observations extremely difficult.

Soon such strong doubts had public expression that no one dared to look up at the sky any more, for fear of being mocked as a "rocket-gazer."

This development of the matter was not at all pleasant for Kort. Even if he himself, on a logical basis, believed that the shot had succeeded, it was fatal for the public to think itself made fun of. What effect would this have on his collection of funds, now just ready to start? The public might after all pass over a failure, but it would never pardon having been fooled. Doubtless the inevitable inclination to generalization would produce at least a very reserved frame of mind as regards the question of spatial navigation.

A bad omen for the fate of the national collection!

Kort grew very angry.

"This botcher!" he growled. "Apparently the machine was badly made and has come to grief. It would have been better if he had kept quiet about

his shot into infinity. Public opinion is quickly destroyed!"

It did not occur to Kort that he was really heartily wishing success to his dangerous rival. He honestly hoped that the rocket would still be discovered in its path to the moon.

CHAPTER IV

THE RIDDLE

FROM the Canal St. station of the Boland subway a man slowly climbed the stairs to the open air. He looked about in hesitation and then walked over to a policeman.

"The *Angel* drugstore?" answered the latter to his question. "That has been closed for six months, and the building is being made over to a moving picture theatre."

The inquirer gave polite thanks for the information. Pleased, as though the policeman had given him very satisfactory news, he continued up Canal St., carefully examining the white tablets with the name of the streets, and turned into a side street. Stopping before a high, dreary lodging house, he drew from between the tobacco pipes and pouches in his pocket a crumpled envelope, comparing the address with the number of the house.

"Well, just wait, my dear Mrs. Martin!" he said to himself with a grin. "You will be in our hands, after all!"

Then he entered the house and stamped up the grey creaking stairs. Each story contained three dwellings, and accordingly old Sam had to study several dozen nameplates of occupants and visiting cards of sub-letters, until finally on the fourth floor at the right he saw the name Martin.

For a long time nobody answered his ringing. He pressed the button a second and a third time, when he at last heard shuffling steps in the corri-

dor. The door, secured by a safety chain, opened barely a hand's breadth.

"Who is there?" cried a thin squeaky voice, apparently belonging to a woman and startling Sam by its tone. He never could endure talking with invisible persons.

"Just open the door, my good Mrs. Martin, I am not a burglar," he said in the friendliest tone possible to him in his sudden excitement.

An ill-smelling vapor of sour milk and steamed sauerkraut came from the narrow opening.

"What do you want?" asked the voice behind the door.

"I shall explain it exactly, as soon as you have opened the door, Mrs. Martin!"

"But I am not Mrs. Martin. They moved out long ago."

"Is that so?" said Sam in surprise. "Then why is there a plate on the door with the name of Martin?"

"Are you from the housing commissioner?" said the voice, in which there now sounded a blending of mistrust and worry.

"Do not be alarmed, my good woman! Please tell me where the Martins live now, and I shall not bother you any more."

"Ask the porter!"

Samuel Finkle was glad to follow this rude but practical direction, and luckily found in the porter a creature of flesh and blood—very much flesh, indeed.

"Well, the Martins!" said he. "Yes, the Martins! Just keep your fingers away, my dear sir. Mr. Martin is not going to keep his eyes shut much longer. I advise you to stay away!"

Uncle Sam could make no sense of the stuff the man was saying, yet he congratulated himself on having found so talkative a person. Here he could count on learning more than

from the invisible spirit on the fourth floor.

"I know you mean well by me, porter," said he, "but will you please be so kind as to express yourself more plainly. I do not understand you."

Then the porter laughed so loudly that it reechoed.

"Oh, don't try to fool me that way! Of course a person does not hang his dirty linen in the market place. But you don't need to hide things from me; I can keep quiet. I've seen plenty of fellows sneaking up the stairs, when Martin was over at the drug-store."

THE porter grinned in a greasy, ambiguous way, perfectly comprehensible to Sam.

"Fortunately they moved out before we had to get after them with the authorities. This is a respectable house. Of course we put up with things and sometimes shut both eyes a bit. But she went too far, till it even caught the attention of the tax collector on the first floor, and anyway her shamelessness was getting too much for me."

"Tell me, how did this Mrs. Martin really look?" asked Finkle thoughtfully. The porter eyed him from top to toe. There was a threatening tone in his words:

"See here, are you making a fool of me?"

"Not at all; I really do not know Mrs. Martin. I just wanted—well, I am supposed to give her greetings from an old friend."

"So that's it—from a friend! I really might have thought that you were not the lucky man. She used to favor younger cavaliers."

Uncle Sam was getting ashamed of the unworthy role which, against his will he had forced on his young friend. Still, wasn't it somewhat justified?

Hadn't there doubtless been tender relations between Kort and Natalka?

"How does she look?" went on the talkative porter. "Good Heavens, she's a pretty thing, one must admit; and," he added pleasantly, "she has legs, such legs that it is no wonder the men run after her. Oh, how does she look? She has short black hair, a white skin, and—Heavens, how shall I express it!—she looks like a vaudeville actress or something of the kind. The devil take the women!"

Uncle Sam was getting noticeably uncertain in mind.

"Short black hair, you say? About how old is she?"

"Much too young for you, you may depend on that!"

"And do you know her first name?" Sam went on politely, though he felt a desire to give the impertinent man a good box on the ear.

"You have me there! She has a lot of names, a different one for everybody."

"And where did you say the Martins were living now?"

"Shortly after they had sold the drugstore, it was the turn of the dwelling. There is a lot of business in that nowadays. It is hard to pay for lodgings, especially in a pretty, roomy building, if a person to whom you let a room moves away. After that they went to Vienna and now, so far as I know, they are in Budapest. I recall, that is right. Martin recently wrote me about the coal which was still in his cellar, and he mentioned that his wife was again appearing at the—the—what do you call it?—the Or. . ."

"The Orpheum, don't you mean?" put in Uncle Sam, who had a good knowledge of the world. "And the address? Have you the letter still?"

The porter opened a drawer of his desk and searched in a regular mountain of papers, while Sam strove to

bring his ideas to order. Had his Gus been really attracted to such a woman—his Gus, whom he loved as a father would his son. To be sure, it often happens that intellectually gifted, eminent men seem smitten with blindness when women are in question. Yet he would certainly have credited his brother-in-law with a better understanding of mankind.

"Here is the letter!" The porter roused him from his meditation and slowly spelled out the words:

"Budapest, Szabolcs Utca number 54—oh, read it yourself! I don't know Hungarian."

Sam readily believed that and wrote the address in his notebook.

"One more thing: have you any idea what Mrs. Martin's maiden name was?"

"Yes, I know very well, for many of her cavaliers knew her only by her maiden name and used to ask whether a Miss West did not live here."

Old Sam's knees shook. West, the Hungarian name West, was the name August Kort had given him, the name of Nataalka.

Thanking the porter, he gave him half a dollar, because he was always accustomed to be sparing in the way of tips, and set out for his hotel.

FINKLE SCORES

HIS entire artfully formed hypothesis was trembling in its foundation. He had set himself up as a detective, luckily only to himself. He was getting confused. What had he expected? What was more natural than that Mrs. Martin used to have the maiden name of West? Why did this person who was formerly assistant to his brother-in-law and afterward married to the druggist Martin of Boland concern him? Why did he think himself pledged to shield this woman?

Truly, this Mrs. Martin was not worthy of occupying the thoughts of Samuel Finkle. But—was he really shielding Mrs. Martin? It was in fact only Nataalka, whom Gus still cared for. His Gus, whom he wished to free from the unexpressed reproach of having been attracted by an unworthy and unintelligent woman.

Yet Nataalka and this Mrs. Martin were one and the same person!

In an ill humor he pushed into the crowded subway car, worked his way among sharp hatpins and glowing cigarettes, and finally came to a stop in the crowd, firmly wedged between two tall gesticulating natives of Boland, who were chattering away over his head. This disturbed Sam in his already hopelessly confused reflections. Mechanically he reached in his pocket, to protect his pipes from being crushed, and in so doing felt Nataalka's letter between his fingers.

Certainly there was something wrong about this letter. But what?

Anxiously he held fast to this idea and tried to free it from the chaos into which all his logic was threatening to sink. "Letter—letter," he murmured to himself, in order not to forget again that connected with this letter there was something wrong, about which he had to reflect.

At Noll Square he had had enough of the crowd, and he worked his way out of the car. With amazed smiles those in the station watched the slender little man who kept saying to himself, "Letter, letter," very audibly while rushing away as though something hounded him on.

In exhaustion Sam threw himself on a bench. He began to review his thoughts, and again a light came to him.

"If Mrs. Martin is identical with Nataalka," he said aloud to himself, in the manner of an examiner to a can-

didate, "why doesn't she write to Kort from Budapest? Why does she choose this unusual detour by way of Boland? Why does she tell about a drugstore which long since has ceased to exist? Why write these letters ahead of time at all? And who posts them in Boland on exactly the days which are noted on the sealed envelopes? Can she have someone in her confidence here, to look after these letters?"

Again he looked at the postmark. It was that of the postoffice in Canal St.

Perhaps it was this porter, who knew so much and whose sense of honor and propriety had required some impetus from the tax collector on the first floor to reach an ordinary and natural indignation! How could he have forgotten to make inquiries about this?

No sooner thought than done. He quickly set out on the return trip. This time he did not take the subway, the unpleasant mode of travel which confused all his ideas, going on foot instead.

In astonishment the porter beheld his visitor reappear. His reception was not excessively friendly; the stingy half-dollar had perceptibly lowered his opinion of Mr. Finkle.

"Good Lord! What do you want this time?"

"I quite forgot to tell you my name, porter," said old Sam, determined to go the limit, "my name is August Kort."

"From Freetown?" blurted out the other in surprise.

"Quite right, porter, from Freetown. As you know, of course!" This was the man who posted Mrs. Martin's letters. Calmly and confidently Sam continued: "You still have a few more letters from Mrs. Martin to me. You may save the postage. I'll just take them with me."

"But I am supposed to post the letters only on certain days! Besides, how do I know whether you are really Mr. Kort?"

"How else should I know about the letters, my good man? Besides, if you will not give me the letters, the matter is not so important but that you may put them in the stove, for all I care!" With that Uncle Sam turned to go.

"Are you perhaps tired of the Martin woman?" cried the porter maliciously. "If you tell me your exact address and what you say agrees with the address of the letters, then for Heaven's sake take the letters away! I shall be glad to get rid of them!"

Slowly Finkle turned around, named the address of his Freetown friend in a careless fashion, and then receive a little package, which he stowed away in his breast pocket.

His good humor was restored as he left the Canal St. lodging house, never to see it again.

THE DOT IN THE HEAVENS

IN the afternoon, on Pots Square, there was an apparently hopeless confusion of carriages, automobiles, buses, and street cars. Noise, noise, and still more noise! From the Pots station sounded the whistles of entering locomotives, but they could not compete with the shrill yells of the newsboys:

"*Boland News*, afternoon edition—*Herald—Times*."

Uncle Sam held his hands to his ears as he crossed the busy square and turned into Mott St.

"This accursed 'screaming!'" he grumbled. "As if there wasn't enough noise without it, on that windy corner!"

For a moment the calls of the newsboys were hushed. Apparently they were receiving new supplies of pa-

pers. But then they resounded again, louder than before.

"Extra, telegraphic despatch. *Bol-and News*. Moon mystery solved! Discovery of rocket!"

Uncle Sam began to listen. The rocket discovered? In his zealous performance as an amateur detective he had entirely lost sight of the final object of his investigations, the rocket. Hastily he purchased one of these papers, still damp from the press, and scanned it quickly.

"THE MOON ROCKET FOUND!"

"ACCORDING to an announcement of the Lick Observatory in California, at about 5 A.M. on September 9 (at noon of that day, by our time) a dot of light, with a bluish glow, was observed in the eastern sky, moving with great speed toward the moon. At the moment of observation it was about 200,000 kilometers from the earth.

"This is doubtless the Suchinow rocket, evidently exhibiting a phase of illumination as the moon does, at present appearing in the first quarter. This demonstrates that the rocket has no illumination of its own and has only become visible through the reflection of the sun's rays. Thus is also explained the previous failure in locating the rocket, which apparently emerged from the shadow of the earth only after thirty-five hours from the time of starting.

"Since the Lick observation is dated about forty hours after the start, and since in this time the rocket had covered half of the entire distance to the moon, the arrival at the moon might be calculated for to-morrow morning at about five o'clock (Central European Time). It is to be hoped that the sky will be sufficiently clear for the observation of this sensational

event from our Williams Observatory likewise.

"In order to spare our readers a disappointment we warn them beforehand that there is of course no possibility of witnessing this event with the naked eye. Even in the gigantic telescope of the Lick Observatory, with an enlargement of more than a thousand times, the rocket appeared only as a tiny, hardly perceptible dot of light. Accordingly it will be rather pointless to look at the sky during the night with field and opera glasses."

Uncle Sam slowly and carefully folded up the sheet and put it in his pocket. Then he went to a café to refresh himself, mind and body, for further activity.

It was remarkable—eighty hours from the earth to the moon! This was exactly the time required by the Airship sent across the Atlantic in its voyage from Freetown to Lakehurst.

Was there perchance some one up there in that fragile object, about to visit the moon by morning?

Then his thoughts returned to the porter in Canal St. What a shameless fellow! Yet Sam bore him no ill will, since he had furnished valuable information. Now he knew that—well, what did he really know? That Mrs. Martin was Nataka, and Nataka Mrs. Martin? Was the matter not actually made very involved merely through this "explanation"?

He took out the package of letters. Eight envelopes, all bearing Kort's address in the familiar strong handwriting, all identical, even to the heavy line under the word "Freetown," which was exactly repeated in width and direction. There could no longer be any doubt; all the letters had been written at the same time with the same ink.

"Fine doings!" said Uncle Sam to himself. "Writing a dozen letters at

once! No wonder that nothing brilliant results. Still, it indicates energy and persistence."

Then he studied the dates written in the corners where the stamps would be placed. He was interested to note how long a time Nataalka had intended these tender attentions to his Gus.

"Great! This woman actually reasons! Of course she could not break off the correspondence suddenly. That would have attracted attention. Accordingly she lets the intervals become greater and greater, and the correspondence gradually goes to sleep. Well! This Nataalka is not so foolish as might be expected from the contents of the letters."

He had a great desire to open the envelopes. But he did not venture to intrude into the secrets of his brother-in-law. Kort might not like that.

"After all, I can well imagine what there is to read in them," Sam comforted himself. Then he continued with his plans. For a long time he reflected, formed schemes and rejected them, planned like the keenest criminologist, and by the time he left the café had a decision firmly settled.

First he went to a telegraph office, where he sent two telegrams to Budapest and one to Mr. Suchinow, Transcosmos, Bucharest.

After he had procured a berth on a sleeper to Vienna, he went to his hotel, told the amazed clerk that he did not require the room he had engaged, and repacked his suitcase.

Whistling merrily, he went to the railroad station.

CHAPTER V

A FINANCIER'S WORRIES

DOUBTLESS everyone who has visited Bucharest, that city of many bridges on the Dimbovita River, knows the Calei Victoria, the great

street for loafing and afternoon meetings, as well as the world-famous confectionery store of Riegeler.

Bucharest, the Calei Victoria, and Riegeler are ideas inseparable.

At Riegeler's there is always a swarm of people no matter at what time of day you enter the long room. Here young ladies eat sundaes; here high-collared bankers sit, having left the near-by stock exchange for a soda; here the talkative middle-aged ladies, who seem international and are to be found all over the world, knit countless stockings and demolish mountains of cakes and sugared almonds; here connoisseurs of all nations revel in the symphonies of refined sweets, the secrets of which do not seem to escape from this confectionery store.

IN Roumania everyone is fond of nibbling, even more than elsewhere, and it seems very natural for even the countryman to stay to look at these splendors. Carefully dressed, cane in hand, they sit by the hour at the little marble tables and reverently enjoy the latest Riegeler collation.

In this place, in the late afternoon of September tenth, we find Romano Vacarescu in eager conversation with the general director of the Transcosmos Stock Company, Dimitri Suchinow.

The conversation seemed to be rather one-sided. The corpulent little financier held Suchinow firmly by a coat-button, pushed him down on a chair, and spoke eagerly to him. Suchinow hardly listened; he was in a hurry. He wished to see whether there was any more correspondence in his new office in the Calei Victoria, and then he meant to go out to the observatory. The air today was clear and transparent, offering a perfect observation, which today was the more important, because during the night

the rocket must enter the sphere of attraction of the moon.

He was excited and nervous, feeling little desire to listen to the lamentations of the man who cared less about the fate of the rocket than about the rise or fall of his stocks.

"One more thing, Monsieur Suchinow! Is the undertaking to be described now as halfway to success? You know, I have signed the majority of the Transcosmos stock. The last three days of uncertainty have so affected its market value that. . ."

"Good Lord, yes!" cried Suchinow, to prevent further details. "To be sure, the rocket shows a considerably smaller velocity than I had first expected."

"Consequently . . ."

"Merely a longer time for the trip, if . . ." He seemed to be seeking suitable words.

"If?" insisted Vacarescu in mingled anxiety and impatience. He moved nearer, in order not to miss a word of the inventor's explanation.

"If the rocket does not get too near the moon. But Skoryna will take care."

"But if he does get too near, what then?"

The financier bent over, close to the face of Suchinow, as though he would breathe in the reply from his lips.

"Do you suppose it possible for the rocket to strike the moon?"

"By no means. It will only be more difficult and will take time to get away from the moon again!" was the cautious answer.

"What is the percentage of probability of the rocket's safe return?"

"Are you going to calculate the future of your stocks accordingly?" said Suchinow in a jesting manner which excited Vacarescu.

"You certainly have nothing to lose by it. All you can do is gain. But my money, my dear fellow, may stick to

the moon overnight. I tell you, as soon as the stock is at par, I shall let go. I have had enough of the 'shot into infinity,' and I should not care to go through these past days again." Vacarescu cried this loudly and snorted with rage.

"Calm yourself, sir! We are not on the stock exchange. Besides, you are mistaken in your apportioning of the risks. Don't I hazard losing far more than you?" said Suchinow sharply. There was a deep vertical furrow on his brow.

"Indeed!" laughed Vacarescu scornfully.

"In case of a catastrophe my whole life's work is destroyed, and—Skoryna! You forget that a human life is at stake."

"Which costs me twenty thousand pounds. Is that nothing?"

"We will not quarrel, Monsieur Vacarescu, especially now, when we may have every hope that the expedition will end successfully. Good-bye, sir!"

Quickly Suchinow escaped from the fat man. He made his way among the marble tables out into the open air and hurried across the boulevard without looking around. Vacarescu, with his financial worries, was getting tiresome. There was in truth more at stake than a few thousand pounds.

UNCERTAINTY

THE flight of the rocket did not satisfy Suchinow. To be sure, the start had taken place smoothly. Under the backward pressure of the rapidly successive explosions of the energy cartridges the torpedo-shaped space-ship had risen, its speed becoming greater and greater, until after just a minute it disappeared in the clouds.

All this had taken place according to the program. Since the initial acceleration was not excessive, it could

not have hurt Skoryna much. But the failure of the lighting system caused Suchinow to reflect. Apparently Skoryna had not succeeded in eliminating the trouble. And why had he sent to earth none of the radio messages for which Suchinow had waited in nerve-wracking tension? Now the rocket had long since left the reception field of the most powerful stations on earth, not to speak of the impossibility for the tiny sender on the rocket reaching back to earth. Yet in the first few hours after starting Skoryna could have sent word, which would have meant certainty as to the outcome of the shot. This fearful uncertainty of the first days had been ruinous to Suchinow's nerves.

Disappointment, as well as the distrust of the whole civilized world, did not matter to him. But what of this observation by the Lick telescope, from which could be calculated for the first half of the total distance an average speed of only 1,400 meters a second? According to his own figures the rocket would have needed to develop an average speed of 2,400 meters. With this the crossing of the equilibrium point between the earth and the moon, where gravity does not exist, would be guaranteed at about 500 meters a second. Then the free fall to the moon would take place in a weak hyperbola, and the risk of being held by the moon in a closed ellipse would be banished.

Now, however, not much more than half of the necessary speed had been produced. The fuel provided for the ascent would certainly not suffice to carry the rocket past the limit of attraction of the earth. To what extent would Skoryna be forced to draw on the reserve supply, and would the remainder of the dynamic cartridges still suffice to pass the limit of gravity again on the return trip, to break

the free fall to earth sufficiently, and to make possible a safe landing?

Suchinow trembled at the thought that Skoryna might overlook this tremendous danger or rashly cast discretion to the winds.

In that case there would be only two possibilities; either the rocket on the return trip would escape from the moon's field of gravity with its last energy, which would so lessen the supply of cartridges that it would fall to the earth, without sufficient braking energy, and would be smashed to bits, or else it would remain bound to the moon, circling about it as a satellite eternally . . .

What then?

THE rocket contained food, in the form of concentrated pellets, which would suffice for months. There was also ample provision for oxygen. In the meantime a second space ship could be built to come to the rescue. But in the solitude of space, without communication with the earth, in uncertainty as to his fate, was it not absolutely certain that Skoryna would become insane? And would Vacarescu risk any more money on a second model? The Transsylvania Company was out of the question, after the founding of the Transcosmos Company. After all, would not the second rocket meet the same fate as the first?

Suchinow's blood boiled. He must now not lose his calm; he'd just have to keep clear headed! Good Heavens, he simply must not break down! If only he had not yielded to Skoryna's impetuous urgings and had sent instead a model without a passenger!

Yet his fears were perhaps in vain. Surely Skoryna would have recognized his position and would avoid being entrapped by the moon. At a proper distance he could circle about it as often as he pleased. That would

CHAPTER VI

DISCOVERIES

not require any energy or at most only a couple of discharges for steering purposes, not, of course, significant in amount. Skoryna would doubtless recognize and carry out the proper course.

Suchinow sought to calm himself with these and similar thoughts, but he was not master of his tormenting worries.

Quickly he crossed the rooms of his office on the Calei Victoria, noisy with typewriters and still smelling of paint and varnish. He locked himself in his private office.

Here or in the observatory he had spent the last few days and nights as well, since he could not sleep. In exhaustion he sank into the big arm-chair before the desk. He had several hours free, since it was at ten o'clock he was expected at the observatory.

Mechanically he glanced at the tapestries on the walls, at the pretty renaissance clock, and the huge globe in the corner. Then his head sank down, and imperious nature compelled him to sleep.

He was roused by a gentle knock at the door.

"What is it?"

"A telegram, sir."

Carelessly he opened the envelope and read the despatch. As if in sudden terror he started up, tore into bits the innocent little paper which seemed to have brought him unpleasant news, and strode up and down the office on the thick rug which muffled his steps.

"Damnation, there is something wrong there!" he muttered through his clenched teeth. "That is the last straw!"

With a groan he threw himself again upon the chair, picked the scraps of the telegram out of the wastebasket, and reached for his timetable.

WHEN Samuel Finkle reached Budapest, he took one of the cabs which stood in a very long row at the station and drove to the hotel in which he had engaged a room by telegraph.

He would greatly have preferred taking a stroll by the Danube, to refresh himself after the long trip. Then he would drink a glass of Tokay in one of the café gardens near the river promenade and look across the wide blue stream, whose water reflects the fortress of Alt-Ofen and the charming villas of the Budapest magnates, rising from a sea of green. He would have taken pleasure in the vivid striking elegance of the piquant Hungarian women, who in the afternoon crowd the river district.

Uncle Sam had no time for that. There was so much to be done today, and at the stroke of six all had to be ready.

"Room forty-six!" said the clerk of the hotel. The elevator took Sam to the second floor, while a bellboy brought his suitcase and showed him the room.

Uncle Sam subjected his lodging to a careful and detailed examination, doubtless such as he had never before given a hotel room. A small living room with an adjoining bedroom made up the "apartment" which he had engaged by telegram. The bed was miserable, the room telephone did not work, and the light switches were so badly placed that the light could not be put out from the bed. These were matters which ordinarily would have very properly displeased old Sam and have caused him to subject the price of the room to a revision.

This time, however, his demands seemed to be in other directions. First of all he was interested in the commu-

nication door between living room and bedroom, which was covered by a thick heavy curtain. The door could stand open without its being noticed from the living room.

The bedroom had no other entrance and could be reached only through the living room. Then he tested the electric light. The chandelier in the living room had four bulbs, which were controlled by a rotary switch and could be lighted singly or all together. Since only three of the bulbs were sound, however, he removed the one in the reading lamp in the bedroom and screwed it into the chandelier in place of the defective bulb.

Blinking he tried the illumination in the now fully lighted room, the bright walls of which diffused the light. After he had measured the room by pacing it, he turned off the light again and left the hotel, evidently satisfied by his investigations.

He did not now turn to the river promenade but firmly repressed his inclination for strolling and entered a small photographic store on the square.

"Have you a camera?" he asked the young salesman, who looked at him in surprise.

"Have you a camera?" he asked repeatedly, noticing soon that the young man recognized the word. Since Sam could make nothing of the Hungarian answer, he ran the gamut of his linguistic knowledge:

"Do you speak English—parla italiano—parlez vous français—sti rumineste?"

Immediately the salesman began to speak a stumbling high school French and explained that he could furnish a number of first-class makes.

"I need a camera with very great illumination!" said Sam. "If possible, I want one with the opening 1:2!" This the man could not furnish.

He tried his luck in several stores. Finally he found a large specialty store where he obtained the desired camera. He also bought some ultra-rapid plates, which he at once had placed in the holders.

ARRIVING again in the hotel, he so set up the camera that the lens commanded the living room, in case the curtain was pushed aside a little.

Then he hastened downstairs and instructed the porter to take to his living room visitors who asked for Mr. Suchinow or Mrs. Martin.

"I have a little errand to do and shall be back shortly. They can be patient for a short time and wait for me in the living room," he said carelessly, as the porter noted down the names, and then walked out of the front door.

Once outside, he circled around the hotel, returning to his room by way of the restaurant and the back stairs, switched on all the lights in the living room, darkened the bedroom, and drew the curtain across the doorway. Then he sat down in the dark bedroom beside the camera and waited.

It was shortly before six o'clock. There was a crafty smile on his wrinkled face. "I hope they do come!" he thought, yawning. His old habit led him to put his hand in his pocket and draw out a half colored meerschaum pipe. He only came to realization as he was just in the act of striking a match. "Don't be foolish, Sam!" he said to himself and laid the pipe down at a distance, in order not to be tempted again.

Finkle's patience was given a hard test. For half an hour he sat in the dark, without his pipe, terribly bored. Then steps approached outside in the corridor. The door of the living room opened.

"If you please, madam, will you

wait here a little while," said someone in French. Clothing rustled, and such a cloud of perfume came to Sam's nostrils that he had trouble in suppressing a sneeze. Tripping footsteps were audible, then a gentle sigh and the squeaking of the sofa springs.

THE MEETING

SAM cautiously peeped through the curtain.

"Good Lord!" escaped him, luckily not aloud. The porter in Canal St. had not said too much. This lady, dressed in the latest style of close fitting grey autumn dress, sitting on the sofa and thoughtfully tapping the floor with the points of her patent leather shoes, was certainly a pretty little thing. Very black hair, cut short but very thick and combed straight back from her forehead, set off a white girlish face, the softness of which was sharply contrasted with the sensuous and rather pouting lips and the perfectly formed neck, which suggested a slim but very shapely figure. She had crossed her legs, and her dress, which had slipped up to her knee, revealed shapely slender legs, in chiffon stockings, the lines of which quite confused old Sam's thoughts. Of course the lady believed herself alone and unobserved, and he was getting somewhat ashamed of his unworthy position as a spy.

Was it Natalka? She certainly did not look like a woman who understood science. Sam cautiously snapped the camera. A slight click, which was smothered by the ticking of the clock, and the first step toward proof was secured. Quickly and quietly he changed the plate holder.

The lady opened her red morocco case and lighted a cigarette, the fine blue clouds of which penetrated the curtain and awakened in Sam a new desire for his pipe. "A detective has

a hard time!" he reflected sorrowfully, picking up his pipe to have at least a "cold smoke."

Time passed, and the lady seemed to be getting impatient. Sam saw her take a paper from her pocketbook and read it. "Aha!" he thought with a grin. "My telegram!"

Suddenly the door was hurriedly opened, the lady uttered a soft cry, and a tall thin man entered quickly, his face strangely dotted with green. "He seems to have been gassed!" murmured Sam, remembering this type of injury at the time of the world war. "Perhaps the energy cartridges have poisoned him!"

Attentively he listened to the lively conversation which took place in the next room. Unfortunately, they were speaking a language which he did not understand, apparently Russian. That was fatal, and he tried to read some meaning in the gestures and acts of his guests.

Suchinow, for it was certainly he, hastily kissed the lady on the forehead; he seemed to be in an extremely bad temper, and his voice sounded harsh and even imperious. Mrs. Martin twittered like a swallow, pouted, and several times pointed her finger at her head. Then they both spoke at the same time, as though trying to drown out the other's words, and finally Mrs. Martin held the telegram before the man's eyes.

"Now's the time!" thought Uncle Sam, having his camera in readiness and snapping it just as the two quarrellers turned their faces in his direction. To be more certain, he took a second picture. Then he moved the tripod aside, put in his pocket the holders of the three exposed plates, and peeped again through the curtain.

Suchinow was just holding the perplexing telegram in his hand and reading it!

"Expect me Friday evening six sharp Imperial Hotel Budapest. Suchinow."

Samuel Finkle came near uttering a cry of joy. Suchinow, doubtless because of the excitement caused by the telegram, was now speaking French, and both conversed in this tongue, so that now Sam was able to understand everything.

"And you believed that, you goose?"

"Oho, what you lack in politeness!" said Sam to himself with a grin, making a parody of a line in a popular piece.

"Why shouldn't I?" cried Mrs. Martin, stamping her foot.

"You knew perfectly well that I was in Bucharest, and the telegram came from Boland! You might have known that something was wrong!"

"That is just why I took the matter so seriously. If you are in Boland, said I to myself, there are important and surely very unpleasant reasons!" With a smile the slim piquant creature added: "Besides, my dear sir, didn't you get caught by the same trick?"

"You may be sure that I should not have crossed the Carpathians unless I by chance had business at the Magyar Bank here."

"What simply charming logic!" said Mrs. Martin, dancing a few shimmy steps. Then she took a small comb from her pocketbook and calmly rearranged her hair before the mirror.

SUCHINOW walked up and down thoughtfully. He seemed to be undergoing some inner struggle, and the most vivid anxiety appeared on his careworn face.

"Then the other telegram is not from you?"

"No!—Besides, you are looking very poorly, father; you ought to take things easier," warbled Mrs. Martin.

Uncle Sam rubbed his hands. "Did

she say 'father'?" The mystery was beginning to become clear.

"Quit that silly talk; I have something to think about besides my complexion. Have you still the letters for Kort?"

"I left them in Boland, in a safe place."

"With whom?" asked Suchinow curtly.

"With our former porter."

"Does the man know . . . ?" said he, while his glance was threateningly directed at his daughter's pretty eyes.

"Nothing from me, anyway," she answered snippily.

"From whom else, then? Doubtless the man has betrayed something. That comes from trusting silly women."

"My dear father, I did not ask to be trusted. If you are not more polite, I shall simply leave you here and go. What do I care about your whole business? Don't bother me with your mysterious activities."

Mrs. Martin, still occupied at the mirror until this moment, now executed an elegant turn on her heel, put her hands in the little pockets of her coat, and looked imperiously at her father.

Uncle Sam was sorry for the man, as he relentlessly walked back and forth, cudgelling his brains to get on the track of the sender of the telegrams. "Don't take the trouble, sir!" he thought, as Suchinow picked up the telephone, only to throw it back on the hook again angrily, after several attempts to get a connection.

"The porter must know who occupies these rooms," he said, gnashing his teeth. "Woe to the fellow who has dared intrude in my affairs! Let us go; there is nothing to be learned here."

Sam waited a while longer, after they had gone. Then he crept out from

his hiding place, put out all the lights, and left the hotel by way of the back stairs and restaurant. His first visit was to the camera store, the work-rooms of which were fortunately not yet closed. They shook their heads at Finkle's demand, on which he absolutely insisted, that the three plates must be developed and printed this very night.

"The prints will not even be dry in this short time."

"Then I shall simply take them wet, and it will be all right. They must be delivered in my hotel tomorrow morning by seven o'clock. Please keep the plates for me carefully. If I desire any more prints, I shall write."

He was unwilling to be put off by evasions, and he managed to obtain the promise that his work would be performed.

Sam breathed easier when he had left the store. He had done enough for today, and he was satisfied with his success. In youthful exuberance he spread out his arms and cried: "Now, you merry city of carefree pleasure, now I can see you!"

CHAPTER VII

A CONFESSION

IT was long after midnight when old Sam returned to his hotel. The porter, sleepy-eyed and yawning behind his hand, informed him that a lady had come in the evening, who had asked for Mr. Suchinow, and soon afterward a gentleman who asked for Mrs. Martin. They had waited a rather long time. Later the gentleman had come several times and had insisted on seeing Dr. Finkle. The porter had pointed out, however, that the Doctor had gone out shortly after five and had not yet returned.

"Unfortunately I was detained by various business affairs," said Sam,

well pleased. "Is the gentleman coming again?"

"I believe so."

"Very well, please inform me as soon as he is here."

The porter doubtless had his own ideas about the business which had detained him after midnight, but he wisely kept them to himself, only betraying them by a slight smile.

During the night Sam did no more thinking and planning. He had hardly pulled the bedclothes up around his neck, when he fell fast asleep. The heavy Tokay wine had done its work.

The sun was high in the heavens when he awoke the next morning. It was almost ten o'clock. He hastily jumped out of bed and dressed himself. On the table was a great yellow envelope from the camera store.

"Then there really wasn't such a hurry," he thought, "since Mr. Suchinow does not seem to have been here yet. But it is best to be ready!"

He opened the envelope and made an enjoyable examination of the pictures. They had come out well, sharply defined and sufficiently lighted. It made a really comic impression on him to find that one picture, showing Mrs. Martin and Mr. Suchinow at the height of their quarrel, depicted the lady, obviously very excited, holding a piece of paper before the eyes of the man, while her other hand hung in the air in a violent gesture. The perplexed face of Suchinow was very funny.

"Humor is necessary!" philosophized old Sam, as he rang for breakfast.

Meanwhile Dmitri Suchinow was coming up to the porter in the lobby.

"Can I now see Dr. Finkle?" he asked brusquely.

"Certainly," the porter hastened to reply, "he is expecting you. I shall im-

mediately inform him of your arrival."

"He is expecting me?" muttered Suchinow, taking a seat in a corner of the almost empty lobby. "The shameless man!"

SAM appeared only after some time. He could not deny himself the pleasure of having a little revenge for the long wait the previous day in the dark bedroom.

He went straight up to Suchinow. "Mr. Suchinow?" said he.

"You know me?"

"Yes, indeed!—I am Dr. Samuel Finkle," said he, by way of introduction. For a while the two adversaries looked fixedly at each other. Suchinow tried to hide his worry and excitement by a rough manner, whereas Sam showed himself as sociable and unconcerned as ever, and his manner did not indicate that he was enjoying himself very much.

"Shall we not sit down?" asked Sam politely. "I think we have all kinds of things to say."

"Our conversation can only be very brief, sir. What right have you to meddle with my affairs? Your silly jest with the concocted telegrams has cost me two days, two precious days which cannot be replaced. I demand an explanation and satisfaction!"

Suchinow spoke quickly and sharply, and there was a threatening flash in his dark eyes.

"I am ready for any satisfaction, sir!" replied Finkle calmly. "I advise you, however, to lower your voice a little. Things might be mentioned which for your interest had better remain heard only by ourselves."

Suchinow grew a trifle pale.

"What do you mean?" he burst out. "I beg you to . . ."

"Mr Suchinow!" Sam interrupted him quickly. "Shall I send this photo-

graph to Mr. August Kort in Free-town?"

The name of Kort affected Suchinow like a blow. With trembling hands he took the picture which Sam held out to him. Then he sank with a groan upon a chair and pressed his hands to his temples.

Sam waited quietly until Suchinow slowly raised his head again. He was startled by the pale face and fevered eyes.

"You spied on us," he said feebly; "that is infamous!"

"We will not argue as to whether this was infamous or not, sir!" said Sam politely, almost cordially. "Proper and infamous are relative ideas, regarding which opinions may be very different. Anyway, I know just how matters stand!"

"What are you going to do?"

"That depends on you, sir!"

"What do you desire?" asked Suchinow quickly, and a ray of hope crossed his face.

Old Sam himself did not know what kept him from crushing this man, who doubtless had a theft on his conscience.

"You are mistaken as to my identity. I am Kort's brother-in-law."

Suchinow sank back again, a picture of hopeless despair. "How did you learn that I was connected with Mrs. Martin?" he said softly.

"Through a postage stamp which was badly stuck on," replied Sam. Then he added: "Mr. Suchinow, are you willing to answer a few questions for me?"

"Go ahead and ask!"

"Do you give me your word of honor that your replies will be the exact truth?"

"My word of honor?" asked Suchinow, mockingly. "Can my word of honor still signify anything to you?"

"I see in Mr. Suchinow not a villain

but a man who has been the prey of his own immeasurable ambition," said Finkle calmly, watching the effect of these words. Suchinow bit his lips.

"Good! I give you my word of honor! Just ask!"

WORD OF HONOR

FINKLE waited a while, in order to arrange his ideas. He could not conceal from himself the fact that he pitied the careworn haggard man, ambitious and doubtless talented, now witnessing the ruin of his hopes and the complete failure of his life's work when success seemed just at hand.

"Mrs. Martin is your daughter?" he began the inquiry.

"Yes."

"But her maiden name is West, not Suchinow?"

"She bore the name of her deceased mother, a movie actress of Budapest, who was never my wife."

Sam was pleased with the frankness with which Suchinow touched on so delicate a theme.

"The correspondence with Kort doubtless was intended to keep him from further investigation, was it not?"

"This question I cannot answer."

"Very well. Here is something else. Is the rocket carrying any persons?"

"An engineer named Skoryna, a close connection of mine, is guiding the machine." Sam thought that at these words he perceived unfeigned sorrow in the expression of the Russian.

"How is your undertaking financed?"

"By the Transcosmos Stock Company, the founder and chief stockholder of which is the Roumanian oil magnate, Romano Vacarescu. But why do you ask questions about things which are common talk in Bucharest?"

"It is more convenient for me to get

information directly from you. Besides," said Sam with a smile, "you probably would hardly answer other questions."

Suchinow did not reply, and Sam continued:

"What will be the financial consequences for Vacarescu in case your rocket comes to grief?"

"The shares of the company would then be as good as valueless, that is obvious. Besides that, the insurance deposit for Skoryna would be due. Vacarescu has opened an account at the Magyar Bank, from which twenty thousand English pounds are payable if Skoryna's death is demonstrated or if the rocket does not return within a year from the start."

"Payable to whom?"

"That is something I do not know. Skoryna has deposited the disposal of this sum under seal in the Magyar Bank."

"And if the rocket returns safely?"

"Then Vacarescu is practically the sole owner of the first space ship company in the world. The value of the enterprise would rapidly increase."

"And you?"

"I am and remain the technical head of the Transcosmos Company."

Uncle Sam arose, satisfied with what he had heard.

"Thank you for your information, Mr. Suchinow. I should like to make you a proposal, not unlike a truce. I cannot promise to regard the entire affair as closed, but I am willing to refrain from making matters public so long as you do not interfere with my undertakings and remain absolutely neutral, whatever may happen. I do not need to point out again that I have means of countering immediately and effectively any intrigues on your part. Nevertheless, I ask for your word."

"My word, sir," said Suchinow calmly. For an instant the two men

gazed at each other. Then Finkle bowed slightly and withdrew. He had the conviction that the Russian would keep his word.

Suchinow remained a while longer, deep in thought. Then he suddenly jumped up and hastened away madly. An auto took him to the flying field, where the Aero-Union plane was just getting ready for the flight to Bucharest.

Three hours later he was entering his offices in the Calei Victoria.

CHAPTER VIII

THE DRIVE BEGINS

THE drive for money to construct the Kort space ship was started. In all the papers appeared warm appeals, written by Director Herst, calling to mind the fate of the old airship and addressed to the national spirit of the country.

On the occasion of the meeting of the Society of Engineers, Herst (who was a member of the board of directors) took the opportunity to make an impressive appeal on behalf of Kort's project, closing with these words:

"... The Dirigible years ago spread over the whole earth the fame of our spirit, technique, and work.

"And now the lofty music of our ability shall resound to the canopy of stars—in distant unknown worlds our colors shall shine and announce that this nation lives!"

A thunder of applause stormed about the speaker, whose heart became light, while inspiration carried him away.

But it is quick work for the dullness of every day to swallow up the inspiration of a festival occasion. It is one thing to be present at a festive gathering, in evening dress and starched shirt, listening to a speaker

with enthusiasm, as he says, "We will be a united nation of all brothers!" But it is quite another to sit in an office, in shirt sleeves, behind a heap of unsettled law papers.

To be sure, Herst's appeal had not been without effect. But many a patriot of the drinking table, actually overflowing with enthusiasm on occasion, felt Herst's words deep in his heart and still seemed to find an unavoidable hindrance to subscription in the shape of an unfilled pocketbook.

Funds came in slowly and weakly, in very small amounts, though all the larger newspapers had come to the aid of the enterprise, opening and publishing lists of subscribers.

Nevertheless, Kort was not deterred from starting the construction. He hoped that greater sums would come in from somewhere. Councillor Herst tirelessly showed the officials in detail how much the great construction at Lake Conway would enliven the dull demand for labor, giving hundreds who were out of work at least temporary employment and pay. Promises were made to keep it in mind, to talk it over with the representative of the central government; they would see what could be done. But for the moment that was all.

The failure of the public to subscribe was due in part to the uncertainty as to the success of the Suchinow rocket, which was everywhere the usual topic of conversation. They were too much inclined to identify the space rocket with Kort's space ship.

* * *

The great mathematics lecture room of the technical college in Mandon was full to overflowing. The audience sat packed in the long rows of seats, people crowded the aisle, and hundreds had to turn around again on the stairs, since it was impossible

to find even the smallest standing room in the great hall.

August Kort was speaking of the problem of spatial navigation and its solution.

On the platform stood the broad-shouldered man whose name had been so often mentioned. His clear, grey eyes surveyed the gathering, while between his fingers he was rolling a piece of chalk. He calmly waited until the unrest in the hall was stilled.

Then he began:

"Ladies and gentlemen! The rocket of the Russian engineer Suchinow has shown mankind that a trip to the moon has been removed from the realm of fiction and made reality."

There was absolute stillness in the auditorium. As though enchanted, all eyes were on the speaker's lips.

"The shot into infinity is nothing absolutely new. Decades ago eminent physicists busied themselves with this problem and indicated its solution as perfectly possible after the overcoming of a few technical difficulties.

"The first and simplest projects of this sort depended on sending a body from the earth at such speed that, passing the field of attraction of the earth, it would not fall back again upon our planet. But this idea had to remain impossible, except in phantasies of the Jules Verne type, since the entire necessary speed of not less than twelve kilometers a second would have to be given such a shot right at the start. Quite apart from the fact that no living creature can endure such acceleration, even the construction of such a giant cannon belongs in the realm of fancy.

"A serviceable means is provided by the rocket, however, whose effect depends on the recoil of explosion gases flowing with great force through narrow exhaust pipes. The motion of the rocket is not caused by

the fact that the gases issuing out push on the air; on the contrary, it is based on the purely mechanical law of the maintenance of the centre of gravity. This is the same law which conditions the recoil in the case of fireworks. Accordingly, the rocket principle does not fail to act in airless empty space but on the other hand develops its greatest efficiency right there, since air resistance and earth attraction alone hinder the motion of the rocket."

KORT'S APPEAL

KORT then covered the two great blackboards of the lecture hall with sketches and formulas, by which he explained the operation and construction of the space rocket.

"You see," he went on, "it is perfectly possible to send a rocket relatively slowly from the earth. That is, the acceleration will be such that the human system can endure its pressure. Since the amount of fuel to be taken along is limited by the practicability of the apparatus; everything depends on the kind of fuel and its latent chemical energy.

"My earlier experiments showed that a certain mixture of powerful explosive powder produces an intensity sufficient to carry a properly constructed rocket beyond the limit of gravity, provided the machine is very quickly (in little more than a minute, that is) brought from the condition of rest to the necessary speed of twelve kilometers a second. In this case the acceleration pressure becomes effective, completely excluding the carrying of human beings or at least subjecting the lives of the crew to this extreme utmost risk. Prolonging the time of the start would certainly remove this danger; it would, however, naturally have the result that the rocket would have to struggle

so much longer against the field of gravity of the earth and would be compelled to use up its fuel before attaining the speed necessary for finally passing from the earth's field.

"Whether Mr. Suchinow has been able to strike a satisfactory balance between these two possibilities, I do not know.

"Things are otherwise with my space ship. . . ."

A stir which ran through the hall caused the speaker to wait a few moments until the multitude was absolutely silent again. Then he continued:

"To be sure, the machine which I have planned depends also on the rocket principle. Yet after long struggles and missteps I have finally succeeded in making an arrangement using liquid fuel as a source of energy instead of powder energy cartridges. Therewith the problem of conquering the solar system has come an immense stride closer to realization. For my combination of hydrogen, alcohol and oxygen affords per kilogram almost three times as much energy as the same amount of the best available nitrocellulose powder, the expulsion speed being over 5,000 meters a second.

"And it depends on this alone."

A GAIN there was a whispering among the hearers. After the previous explanations it was clear to everyone what this fact meant for the safety of the crew, indeed, that by this means the entire question of spatial navigation was for the very first time approaching a satisfactory solution.

With satisfaction Kort observed the impression produced by his announcement. He continued speaking for about an hour more. Forcefully he tried to convince both the public and

the scientists of the practicability of his ideas and to stifle at the start any possible doubt by giving unquestionable calculations, keeping secret only the final details of construction.

"Ladies and gentlemen, I am drawing my talk to a close. The first aim of my space ship is the encircling of the moon. It is, however, no longer doubtful that with the machine which I have explained, actual cosmic speeds may be attained, sometimes making use of the field of gravity of the sun. And we may rightly hope that in no distant time it will be possible to pay comfortable and safe visits, within travelling times possible for human beings, not only to our nearby moon but also to the neighboring planets Mercury, Venus, and Mars—perhaps even to Saturn with its rings, perhaps to distant Neptune itself."

As Kort closed his remarks with a brief bow, there was a moment of oppressive stillness in the hall. Then it was like the coming of a storm. The floor shook beneath the stamping of the college boys, a mad clapping of hands expressed thanks to the great inventor, there were shouts of "Hurrah for Kort!" and the entire crowd pushed toward the platform to carry Kort from the hall on their shoulders.

Then he arose with flashing eyes, commanding silence by a wave of his hand. His clear voice rang out through the hall:

"Ladies and gentlemen, I thank you for your enthusiasm! Yet demonstrate it not by words but by deeds! All help out, so that the space ship may not remain a mere project. Help out, so that it may be a secure possession of our country!

"I have sacrificed my property to it. I am standing here a beggar! Now it is your turn!"

Silence prevailed as Kort left the hall. Yet in hundreds of eyes he saw

understanding shine forth ready for action; understanding, which gave him new courage to continue working without hesitation on his great task.

CHAPTER IX

FINKLE INVESTIGATES

DR. FINKLE, meanwhile, had not passed the time idly. He had remained several days longer in Budapest and had made some discoveries about the Martin couple.

It became more and more mysterious to him how Kort had been attracted to this woman and had been able to think her a serious scientist. Even if the hateful remarks of the Boland porter were perhaps exaggerated, there was no question that Mrs. Martin, now successfully appearing as *premiere danseuse* and leading a very gay life, had no interest for anything but clothes, new dances, costly dinners, and numerous cavaliers. Gus must have been smitten blind when he took this society creature as an assistant.

From papers which Sam purchased, he learned of the commencement of the drive for funds for Kort. He also found a full text of the Mandon lecture. With great interest he followed the daily reports about the course of the rocket, now circling about the moon.

"Will it return? Is it held fast by the moon? Is the occupant still alive? Will it be wrecked on the return trip?" These were questions appearing day after day in the press and dealt with more or less logically. The outcome of the "shot into infinity" was still uncertain when Sam left the merry lighthearted city on the Danube to pursue his plans further in Bucharest. He had not yet sent any news to Kort.

Finkle chose the roundabout route

via Hermannstadt, in order to look around a bit in the Oltu Valley, before honoring Mr. Văcărescu by a visit.

In Calimanesti he left the slow train which thrice daily snorted its way through the narrow valley from Hermannstadt to Slatina at not more than a snail's pace. Vainly he looked about for a carriage. There was nothing to be done but go on foot the several hours' journey by way of Berislavesti to Suicii. He took his time and had much enjoyment in the gloomily majestic landscape, in which there were no little hills and slopes, the darkly wooded Carpathians rising steeply from the valley and mounting up to heaven.

In Suicii he derived considerable benefit from his slender knowledge of Roumanian. Cautiously he questioned the dirty mountaineers, wrapped in sheepskins in spite of the heat, like that of a belated summer. They had not yet recovered from the terror caused by the thundering rocket. With evident horror they told in a mixture of Roumanian and Hungarian about the devil's work on the plateau. The earth had been torn up, a hellish glow had flooded the mountains, and everyone had thought it the end of the world.

"You know, master," an old ragged cowherd whispered to Sam, "things weren't right up there. The devil himself was taking a hand. Just think, when the devilish noise was over, the heavens were covered with thick clouds, for weeks there was grey mist in the valley, and . . ."

"That's nothing remarkable!" laughed Sam.

"Don't jest, master! The mist was nowhere from Caineni to Slatina, only here in the neighborhood of the bewitched plateau. And it wasn't any ordinary mist. It was made of dense heavy gases, hot as beef stew—

and . . ." he brought his mouth close to Sam's ear and whispered, "it smelled like pitch and sulphur!"

SAM remembered that Kort had once told him the energy cartridges were filled with powder, which on exploding evolved an extremely evil smelling gas. It was right; he had at the same time mentioned that the rocket on starting left behind a stream of such superheated combustion gases that it was advisable to start the machine in some place not densely populated.

"Can one see the works at the Valeni monastery?" he asked.

The old man crossed himself. "For the sake of your soul's salvation, master, do not go there! No one now enters the valley of Valeni, where at night the poor souls have to work for the devil."

In spite of this insistent warning, Sam walked to the monastery along the road which had been softened and cut up by heavy trucks. The villas on the side of the mountain seemed abandoned. The cable line hung motionless and unused across the valley. In the monastery yard a few people were busy piling up great steel containers. Unchallenged, Sam passed through the gate and watched the workers a while. As though in sport he picked up one of the empty steel cases which lay about looking somewhat like shrapnel cases and containing about a liter.*

"Can I see Mr. Suchinow?" he suddenly asked. In surprise the workmen, who had hitherto turned their backs to Sam, turned around and stared in wonder at the intruder. Since he received no answer, he repeated his question in French, likewise getting no response. "Suchinow?" he then said slowly, stressing each syllable:

"Su-chi-now?" He also made a questioning gesture.

"Suchinow?" repeated one of the workmen. "Suchinow Bucharest!" And he pointed to the south.

Without concerning themselves further about the visitor, they again returned to their work.

Sam climbed up to the plateau.

Tall massive concrete pillars rose in the air, enclosing a deep circular excavation in the earth, which was half full of mud. Clumps of earth lay scattered all around for a great distance, as though an immense bomb had burst in the space surrounded by the pillars.

Utterly exhausted, Sam reached Calimanesti that evening. Fortifying himself with some corn bread and plum brandy, provided him by the station master, since there was no restaurant, he continued his journey on the night train.

In Bucharest he had a real sleep before continuing his investigation, which now was chiefly concerned with the financial basis of the Transcosmos Stock Company. It did not prove difficult, by way of cautious questions at the leading banks, to find out that Vacarescu had in his own hands about sixty percent of the entire capital stock, the remaining forty percent having been taken over in equal amounts by two Bucharest financial interests, the Transsylvania Company, and the Bank of Roumania. Since Vacarescu first of all had reckoned in his expenditures in building the rocket and from the remaining actual funds had provided the insurance sum for Skoryna, the shares were evidently worth at most sixteen percent, in case the rocket should come to grief and Skoryna be killed.

"A risky business!" remarked Finkle to the head clerk of the bank, who gave him this information.

* (1,000 cubic centimeters)

"Yes, the stockholders risk a great deal!" the latter agreed. "Doubtless many would rather sell below par to-day than tomorrow. Still, if the venture succeeds, then the stock will rise."

"Well!" said Uncle Sam. "How would it be if the Transcosmos Company encountered competition which would settle its fate, even if there were the most successful outcome for the rocket enterprise?"

With these words he passed through the window the newspapers with information about Kort's project.

"The construction of Kort's space ship has commenced. Don't you think that it can at least be very injurious to Vacarescu's undertaking?" Sam added, while the banker scanned the news with increasing interest.

"Thank you very much, sir, for your hint. May I make further use of it?"

"You are very welcome. You will be able to get further information in any paper. The papers here seem to be showing extraordinary reticence regarding this coming event."

CONFRONTING THE FINANCIER

FINKLE was also able to secure access to the managing office of the Transsylvania Company. He freely admitted that he was connected with Kort and wished to get information regarding the basis, plans, and further intentions of the Transcosmos Company. He firmly denied the suggestion that there might be some interests in common.

Thus he slowly but surely undermined the value of the Transcosmos stock, and the confidence of the shareholders was again destroyed. The reports from the observatories did the rest. It seemed more and more certain that the rocket was permanently cir-

cling about the moon. Whether this was intentional or forced was a question which all the observers considered but which none dared to answer.

When Sam thought the preparations sufficient, he went one day to the little palace on the Dimbowita, Vacarescu's home in the northwest quarter, where the villas of the rich of Bucharest are to be found. He was received with a polite but unmistakable shrug of the shoulders. Mr. Vacarescu was not at home. Twice more he tried it, after which he lost patience.

"Mr. Vacarescu is accustomed to be at home at this hour!" he said to the liveried servant. "Announce me again and say that it is a question of something extremely important for your master, something allowing no delay. Give him this card." He then drew out a new visiting card and wrote a few words on it in pencil. After a short time the servant reappeared.

"He will receive you tomorrow noon in the office of the Transcosmos Company!"

"Fine!" grumbled Sam. "One day shall not stand in the way."

The following noon Sam was promptly in the Calei Victoria and was at once admitted.

Vacarescu was sitting at the desk in Suchinow's private office. He was alone. Sam was much pleased to be able to converse alone with the noted financier. At first no notice was taken of his entering.

"What do you want?" Vacarescu asked after a while, without turning around.

"First of all, a seat!" answered Sam angrily. He was always roused by impoliteness.

Vacarescu slowly looked up from the desk, his thin nose trembling strangely. With boundless amazement

he gazed at the man who dared confront the oil magnate Romano Vacarescu in such a way.

"You speak boldly, sir!" he said with a drawl, making however a gesture toward the sofa.

"I am accustomed to politeness!" said Sam calmly, sitting down.

"Who are you and what gives me the pleasure of your visit? Please make it brief. I do not like verbosity."

"My name is on my card. I invite you to open an unconditional account for an inventor."

Vacarescu's lids lowered, and he reached for the bell.

"Sir," said Sam quickly, "you can have me thrown out. But I assure you, very soon you will be asking me to visit you, and I likewise assure you that I shall not return a second time."

The fat fingers with the many rings slowly withdrew from the bell.

"Well, then, what do you want?"

"A loan, as I already told you."

"And the security?"

"The word of an honorable man."

"Won't you express yourself more concretely? You are beginning to weary me. For whom do you desire the loan—for yourself, maybe?"

"For my brother-in-law, August Kort."

Vacarescu looked up quickly, interested.

"For the inventor?"

".....of the space ship," added Sam by way of supplement.

"I am amazed at your strange request. Do you know that you are speaking to the founder and chief stockholder of the Transcosmos Space Ship Company?"

"... who is risking a fortune in it, and whose only mistaken speculation, perhaps, is the Transcosmos Company."

"You seem very daring, sir. If you seriously wish to suggest that I again

take part in such an undertaking, please do not waste your time any longer."

"You are mistaken. There is no question of your taking part. I want merely a loan, an unconditional loan due only at the end of five years. We can come to an agreement regarding the interest."

"Is this why you came from Free-town to Bucharest?" Vacarescu seemed amused.

"Certainly!"

"You might have saved yourself the expense."

"We shall see. First let me give you some advice. It would be advantageous for you to buy up the forty percent of the Transcosmos stock which is in other hands."

"I suppose you know from some reliable source," said the fat man scornfully, "that the flight of the rocket will result absolutely satisfactorily, isn't that so?"

"On the contrary, I am absolutely convinced that the 'shot into infinity' is dying away without effect," said Finkle, while the twitching at the corners of his mouth showed his meaning still more.

"Stop!" he added, noticing that Vacarescu was again reaching for the bell. "My mind is perfectly clear, and I know exactly what I am saying."

FOR OR AGAINST KORT?

THE Roumanian drummed nervously on the table. "You are putting my patience to a hard test. If I still listen at all, it is only because I am really eager to know how you intend to make this tissue of absurdity at all plausible."

"Patience brings its reward, says an old proverb, the accuracy of which you will at once perceive."

"Speak to the point, if I may ask!"

"All right! If the rocket comes to

grief and the insurance sum for Skoryna has to be paid, the assets of the Transcosmos Company will be so reduced that the shares can be valued at not more than sixteen percent."

"You have exact information!"

"As you observe! In this case you lose about eighty-four percent of your investment."

Sam would not be turned aside.

"Surely! For to-day you can get the shares of the other investors for not more than seventy percent of par; if you proceed carefully, they will be cheaper! Thereby the average cost of your total investment would be reduced from one hundred percent to about eighty-eight."

"Correct! What then?"

"Now, assuming that the rocket is still safe and Skoryna alive, you can so manage by liquidation of the company that you lose nothing."

"But man!" cried Vacarescu impatiently. "In that case I have no idea of liquidating!"

"Under certain circumstances you will have to have this idea, Mr. Vacarescu! But let us leave that for a moment. I repeat: if Skoryna is alive and you follow my advice, you will not lose a penny. Now, you are doubtless aware of the course of the rocket to date. In all probability it will keep on circling about the moon until—please excuse me if I light my pipe—it makes talking so much better—"

"Until it . . .?" insisted Vacarescu.

"Until it is reached by Kort, and Skoryna is rescued, and thereby the payment of the insurance is avoided."

Vacarescu was silent for a long time, while Sam comfortably blew thick clouds of smoke into the air.

"Then I am to risk further outlays to save my previous investment—you really mean that?"

"You have understood me perfectly. Besides, there might not be

any excessive risk in it. Listen."

Sam unfolded a few newspaper pages and translated to the attentive financier the reports of Kort's lecture at the technical college in Mandon.

"Don't you think," he added, "that work is being prepared here to which your company must surrender?"

"Man, don't you consider," cried Vacarescu in excitement, "that you are asking me to finance my most dangerous rival—assuming that all this is correct—and to finance him unconditionally?"

"Mr. Vacarescu!" said Sam, rising.

"Consider well whether you are willing or unwilling to seize this solitary chance to save Skoryna and to withdraw without loss from your enterprise. In brief, this is the question: with or against Kort! Since I may doubtless assume that you will wish to discuss this decision with General Director Suchinow, as I strongly recommend, please give Mr. Suchinow this package. He will surely give you the right advice. I shall wait until tomorrow evening for news of your decision as to the main point. The further details are entirely subordinate."

"Good-bye, sir."

Sam departed, and when the outside door had closed behind him, he laughed so loudly that the passers turned around to look at him.

The package contained the empty energy cartridge and the Budapest photograph of Suchinow, on the back of which Sam had written these four words:

"For or against Kort?"

CHAPTER X

THE CALL FROM THE SKIES

MR. NIELSON, the aged observer of the Lick Observatory, had pointed the telescope exclusively for studying the rocket. Night after night

he sat at the eye-piece and did not let the space ship escape his vision.

The conflicting emotions which stirred within the old investigator had brought him into a strange state of mind. However perfectly he could follow with his own eyes the rocket at night, however exactly he calculated its path on the basis of the construction figures which Suchinow had now published, he nevertheless simply could not believe that man could safely dare to leave his place on earth, appointed to him at creation, and force his way into the secrets of infinity. Though he convinced himself every night that the rocket was pursuing its course without deviation, it had become absolute certainty to him that the bold man who was circling about the moon up there in space, separated from his fellow beings, out of reach of any communication, must be dead.

On the fourth day after the start, the tiny dot of light appeared at the distance of a few diameters of the moon northwest of the now fully illuminated disk. Then it seemed to approach nearer and nearer to the moon, touching the disk, and then disappearing. Some ninety minutes later it appeared again at the southeast edge, made a very narrow loop, and again entered the disk at the southern end. The rocket had gone around the moon and was now passing in front of the disk.

Since this procedure was repeated at equal intervals, the assumption was that the rocket was circling about the moon in a regular gravitational path. Exact measurements gave an orbital time of three hours and six minutes, with a distance of two thousand five hundred kilometers from the centre of the moon. The moon therefore had acquired a tiny satellite of its own in the shape of the rocket which was

travelling just eight hundred kilometers above its surface.

Not the slightest irregularity in the motion indicated that human hands were involved and that the rocket was travelling its cosmic path as a space ship capable of being steered; rather than helplessly like a meteor or one of the tiny asteroids.

Weeks passed. The orbit of the rocket remained unchanged, and Nielson thought it impossible that a heart should be beating and a brain thinking up there in that tiny fragment of the earth. He was therefore all the more startled by a new and unexpected observation.

In the fifth week after the start, when the moon had again become full, the shadow of the earth came so close to the moon that the rocket, though not the moon itself, entered the shadow and disappeared.

Mr. Nielson was just going to leave the observation place, since the rocket would be invisible for some time, when he saw—was he mistaken or was it reality?—a weak, scarcely perceptible glimmer, a dot with a red glow. In truth, the rocket was illuminated without sunlight.

IN excitement Nielson adjusted the telescope to the greatest enlargement. There could be no doubt! The space ship was artificially lighted from within.

The light went out, shone again, flickered, and again went out.

"Good Heavens! The man is still alive, still alive, all alone out there in the void!"

The assistant rushed up.

"Do you see the gleam of light?" asked Nielson, as the other scanned the heavens. He had grown pale and was trembling with excitement.

"Yes, sir, but the light is not steady. It is constantly switched on and off.

What is that? Short—short—long—short—long? Mr. Nielson, it is—it is the Morse code. It's a message from space. Here it is again: short—short—long—short—long! Sir, it is the international Morse call-signal."

He actually shouted it.

Nielson clutched his breast, as though he would quiet his wild heart-beats.

"Write, sir—for Heaven's sake be quick—perhaps this is the only observatory which will get the call from the skies. Let me look, sir; my eyes are younger than yours! Again the call-signal. Now comes a word! Are you ready to write, sir? Short short short—long long long—short short short . . ."

Hastily the old scientist noted the dots and dashes with trembling fingers. Then the assistant sank back, deathly pale, horrified.

"What is it?" cried Nielson.

Feebly the assistant stammered: "S-O-S!"

"Great Heavens! The international call for help! Ship in distress!"

S-O-S, S-O-S, S-O-S cried the flashes of light from space, from an infinite and unattainable distance.

For a quarter of an hour the call was repeated. Then the dot of light by the moon went out. The rocket emerged from the shadow of the earth and once more shone in the reflected sunlight.

Silent and shocked, the two men looked at the paper, at the momentous dots and dashes. They had heard a message from space, the cry of a human being in an agony of despair.

Send help—help!

Who was to help him out there in the void?

In a few moments the radio transmitter was busy. Skoryna's cry went around the earth and roused the better feelings of mankind.

CHAPTER XI

NEAR DESPAIR

THE construction work at Lake Conway went on only slowly. First the Victoria Airport had secured an unoccupied piece of land beside the lake and had started the preparing of the ground.

A slope rising from the shore offered a good natural foundation for the starting track. Massive girders were erected in the depressions, the irregularities of the ridges were leveled off, and the natural and artificial supports so obtained were joined by great iron rails.

Thus resulted an absolutely straight runway, twelve meters wide and almost two kilometers long. It ran horizontally for a few hundred meters from the future starting point, then gradually rose, ending like a spring-board at the highest point of the slope, the gradient being thirty percent.

Daily Kort inspected the work for hours, making tests of the solidity of the foundation and investigating the quality of the concrete in his laboratory.

Then the construction had to wait a while, until enough funds had again come in to procure materials and pay the workmen. There was constant worry, until the day came which was to rid Kort of his cares.

It was already well along in October.

The mist came up from the lake, settling heavily on the fields, dulling the bright colors of the autumn woods, and veiling the sun from sight. The two greys of lake and air blended to make a sea of cold moisture. The steamers, seeming of an uncanny size, only loomed up out of the mist when right at the shore; they took on board the few passengers waiting and freezing on the slippery pier, and then dis-

appeared again in the mist in a few minutes.

With the departing swallows there had also gone the last summer guests who sought to refresh themselves at Lake Conway. Silence lay over the little city, which was preparing to dream away the winter. In the wide-tiled stoves of living rooms, baked apples and chestnuts were already cooking, the odor of which is a part of the real autumn evening. The last bit of warm weather came again, and the mist timidly crept away before the victorious sunbeams. The sky was a clear blue arch above the lake and the mountains, and the white sails once more sped over the water, taking final farewell of the light and warmth of summer.

It was on such a clear and splendid autumn morning when the startling news of Skoryna's message came to the world.

Pensively Kort looked out into the distance. There could now be no more delay. The solitary man up there was clinging with his last power to a straw: send help!

But who was to help him? Must he not despair of the possibility of rescue?

A MAD impatience seized Kort. It was only because of money, base wretched money, that he stood helpless before his half-completed construction. And up there in space a tortured, agonized human being was calling for him—for him! He alone could help! The ship would have been finished long ago, if these eternal financial difficulties had not put everything off.

The burning of his laboratory came to his mind. It was strange: chance, a trifling spark which produced the explosion, this had set him back many months in his work—and now the

despairing wretch out in the limitless distance must suffer for it.

If only he could send him a message! If he could only flash to the moon this one sentence: Hold out! Was there absolutely no possibility of giving the rocket at least an indication that the message had been received on earth?

Kort felt responsible for the unfortunate person. One reproach gnawed at his conscience. Had it been right to refuse the foreign money, several times offered him, out of vain national pride? Are not all nations alike before eternal infinity?

But there was no time now for reflection. Action was necessary: the construction had to be hastened as much as possible and completed, before the prisoner should despair of rescue and lose his mind.

Kort looked at the clock.

If he hurried, he could still catch the Mandon express. He had to see the representative of the central government, then by chance visit the Banian government, to impress on him the necessity of getting more money as quickly as possible. He hurried to his home to change his clothes. On the desk was a telegram which he heedlessly put in his pocket. It might perhaps delay him, and time was now all important.

On the train Kort became calmer. The comforting influence of speedy travel did not fail to have its effect on him. He carefully considered what he had to say to the official. He would have to listen to him and provide him with funds. A refusal would now be equivalent to murder.

At noon Kort arrived in Mandon. Since he could not count on finding the official in his office before two o'clock, there was nothing to do but wait.

He was just walking toward the centre of the city and considering

whether he should not have lunch in the meanwhile, when someone behind him called out:

"Hello! Hello!"

Kort stopped. An excited little man came running along breathlessly, his overcoat flapping behind him, a pipe in his hand, and pipestems sticking out of his pockets.

"Truly, it is Uncle Sam himself, in the best of health!" cried Kort joyfully, hurrying to meet him.

"Young fellow, you don't seem to recognize your old uncle any more!" exclaimed the latter, shaking his brother-in-law's hand violently enough to dislocate his wrist. "Just the same, it's fine that you came to meet me."

"Came to meet you? I did not have a ghost of an idea that you were in Mandon."

"Why, didn't you get my telegram?"

An idea came to Kort. He fished from his overcoat pocket the telegram, which he had entirely forgotten.

"I received it all right, uncle," he said in embarrassment, "but I haven't read it yet. I shall at once do so."

"That is not necessary now, Gus," laughed Sam. "We do not need to communicate in writing at present."

"But how in the world do you happen to be right here, Uncle Sam, and why didn't you write for weeks?"

"You will learn everything. We just arrived at the Wilton Airport in a Junker plane. That is far better than travelling in the torture chambers of a train."

"We?—Aren't you alone?"

"I am bringing along a man who will provide you with half a million for your work. That made you open your eyes! Didn't I tell you that old Sam had many acquaintances and would look about a little for you?"

Kort looked seriously at his brother-

in-law. "You cannot possibly know how important your information is for me today, uncle! How did you manage it?"

"Gus, I will confess that I am terribly hungry. Isn't it best to do our talking in the Francisco café?"

"And your companion?"

"The two gentlemen went to the Excelsior. Tomorrow you shall see them in Freetown. Come on, Gus, forward march! I shall be immensely pleased to have a glass of extra dark. If you care at all for your uncle, ask no more questions but hurry!"

KORT PARTS WITH THE PAST

WITH some difficulty they found seats in the great hall of the Francisco. Sam would not answer any questions. He was interested only in the menu and seemed to be in the best of humor.

"Tokay in a café by the Danube in Budapest—soda at Riegeler's in Bucharest—March beer at the Francisco in Mandon—what more could the heart desire?" he cried, when the foaming glasses were placed on the table.

"You went so far for the money?"

"In case of need, I should have gone clear to the Ganges!" said Sam, setting to work on his dinner.

When he had averted the worst danger of death by starvation, he finally consented to give a connected story. He gave the fullest account of his investigations into the affairs of the Transcosmos Company and of his interview with Vacaescu, but he kept silent regarding the criminal investigations of his trip.

Kort listened with growing amazement.

"And the Transcosmos Company now wants to finance me?"

"Certainly! Vacaescu intends to open for you an account of twenty-five

thousand English pounds, as soon, as he has convinced himself of the practicability of your project. For this purpose he wishes to examine your model tomorrow and he is bringing as an expert his technical director, this noted engineer Suchinow. Are you afraid of imperilling your secret by this?"

"No, not at all! But I should not like to have any foreign company get claims on my invention."

Sam grinned contentedly.

"Claims? Who says anything about claims? Vacarescu is giving you a building loan with fixed interest, a sort of mortgage on your first ship. That finishes the rights of the Transcosmos Company. After your first flight you will form some company or other, which will then take over and amortise your debts. This mortgage cannot be foreclosed for five years. Up to this time the Roumanian cannot put in a word. And by then your company must have got so far ahead that it can satisfy Vacarescu. Don't you think so?"

"But tell me, Uncle Sam, why does Vacarescu help a rival like me to get started? He must have some interest in the matter!"

"Certainly! He imposed two conditions, to which you can presumably agree. One condition is that you pledge yourself to devote your first trip exclusively to the saving of the rocket."

"In any case I shall do that, as quickly as possible! Do you know the latest news?"

"I know a lot of news, but whether the very latest is included. . ."

"The rocket has sent light-signals to the earth, calling for help!" In a few words he told of Skoryna's message.

"Splendid!" answered Sam. "Now things are going right! Then Skoryna is still alive!"

"And Vacarescu's second condition?"

Sam became embarrassed and tried to evade the issue.

"It is only a trifle, though rather remarkable: you are simply to forget something, acting as though it had never had anything to do with your life, saying nothing more about it, and preserving absolute silence on the subject!"

"What is this 'it'?"

"Less an 'it' than a 'she'; well, I mean Nataka."

In surprise Kort remained silent, while Sam uneasily moved back and forth on his chair and took another drink of beer.

"Uncle Sam, you know more than you have told me!" said Kort in a mildly reproachful tone.

Sam blew his nose, to gain time to think. "See here, Gus, this Nataka is certainly worth no more of your thoughts than this: putting her in a box, closing the cover carefully, locking it, and then losing the key. At present she is appearing at the Orpheum in Budapest, dancing through life with her cavaliers—and August Kort is as indifferent to her as—you are not indifferent to me, Gus."

"Are you certain about all this? You are torturing me, uncle; does it have to be so?"

Sam took out of his pocket the package containing Nataka's letters.

"See here! She wrote a supply of these letters a long time ago and deposited them in Boland, in order not to have to think of you any more and to lull you to sleep slowly. There you have them all at once. Just throw them in the stove."

HE ordered another glass of beer and silently watched as Kort tore up Nataka's letters, one after

another, and burned them in the ash tray.

"So be it!" Kort suppressed his emotion. "Out there in empty space, at a tremendous distance, a human being is struggling for life in the most horrible position to which a living being has ever been exposed. I can bring aid, I alone! There must be no hesitation. I will try to kill my feeling for Natałka, in order to save Skoryna."

"You are a good man, Gus!" said Sam, much pleased. Then, thinking he had one more thing to do, he added, "I also brought you something else. It is Natałka's latest picture, as a reminder of your great folly."

He handed Kort the Budapest photograph, showing Mrs. Martin sitting on the sofa. Kort quickly took the picture, examined it carefully, and then handed it back to Sam with a trace of disappointment.

"There certainly is a striking resemblance, but this woman is not Natałka."

CHAPTER XII

THE MOUNTAIN APPROACHES MAHOMET

KORT returned alone to Freetown. Sam wished to conduct his foreign guests to Lake Conway and therefore spent the night in Mandon.

Monotonously the express thundered through the night. Kort had settled down in a corner of an empty section and was balancing up the events of the day. He was in a position to be satisfied. Even at the official's the necessity of quick action had been seen, and speedy provision of money was in sight. Probably there would also be more money coming in from the public drive for funds. This startling drama in space and this ap-

peal from the skies must certainly rouse the feelings of mankind.

Kort opened the window and let the cool night breeze blow on his brow. "Hold out, lonely one up there!" he murmured. "Hold out and do not despair! I am coming!"

Then he thought thankfully of good old Sam. The withered bony man had accomplished something which Kort would never have believed possible for him. Yet Sam's story left him in the dark on several points. Where did he get Natałka's letters, and what was the meaning of the picture, which Sam had believed to represent Natałka? After the pointing out of this error Sam had remained in impenetrable silence. There was nothing more to be got from him. Who was Natałka, and what had she to do with Vacarescu, who joined so strange a condition with his loan? Would the veil which lay over Natałka ever be lifted, now that Kort had promised to preserve absolute silence on the subject and let her sink into forgetfulness?

Certainly he would keep his word to say nothing more about Natałka and to make no investigation about her; but he would never forget the brave heroine, all the more since Sam's suggestions had awakened his recollection and excited his interest by the mystery which surrounded her.

Involuntarily he thought of the story of the treasure digger who was forbidden to think of a rhinoceros while digging. In his whole life he had never been concerned with a rhinoceros, but now he could not get the subject out of his mind, and the treasure remained undiscovered.

With all his might Kort resisted the tendency to meditate thus. It was time for action, the world was waiting for his work. He could not squander his energy in futile scheming.

The following morning an automobile drew up before his laboratory, and three gentlemen got out. Sam introduced Kort to the foreigners. For a moment the two rivals, Kort and Suchinow, looked fixedly at each other; then Suchinow lowered his eyes. Even if the Russian had erred in his conduct, this penitential journey was atonement enough. It did not escape Sam that the Russian purposely had in one hand a brief case and in the other a small box, an unobtrusive way of avoiding shaking hands.

There was an uncomfortable silence in the great whitewashed room into which Kort led his guests.

THE laboratory disappointed the visitors in its bareness. On the walls were maps and diagrams, and at the window stood an immense table covered with drawings. Except for the numerous electric wires coming together at a marble switchboard and a small table covered with a confusion of retorts, tubes, coils, and wires, there was nothing to indicate the development here of a technical marvel, a truly ingenious invention.

"I cannot show you much here," said Kort, breaking the stillness. "You know that lack of money has hindered construction. Still I think you can get a good survey of the project from the plans and calculations."

Then he explained, so far as seemed necessary, the gasification and combustion of the liquid fuel. He demonstrated the recoil effect by a small model motor.

Suchinow translated the separate sentences for Vacarescu and asked questions. These questions indicated quick comprehension and thorough technical knowledge. Sam meanwhile, taking no part and seeming rather superfluous here, stood in the corner

and smoked. He had already done his part.

"Now that you appear to have succeeded in overcoming the technical difficulties involving the use of liquid fuel," said Suchinow, "hydrogen gas certainly seems to be the most favorable fuel for the space ship."

"You are quite right!" agreed Kort. "But not for the start. You must not forget that only a moderate initial acceleration is possible, in view of the lives of the crew. It would be wasteful to use hydrogen energy to produce the slight starting speed. For that a substance with a greater specific gravity, which increases the load, is even more efficient, because it hastens the penetration of the dense lower layers of air. It is only advisable to let the hydrogen rocket begin to function when its energy really comes to its highest efficiency, that is to say, in the high thin layers and at a greater speed.

"By using suitably mixed fuels, suited to the various speeds, the efficiency of the machine is immensely increased."

"Then how are you going to start the rocket?"

Kort looked sharply at Suchinow. "Until very recently I thought my dynamic cartridge the best solution of the starting problem."

The Russian bit his lips so hard that a drop of blood appeared. His voice was hoarser as he asked, summoning up all his self-control:

"And now?"

"Now I am not disposed to use solid explosives in any form. I have decided to use alcohol to run the lowest auxiliary rocket."

"Auxiliary rocket?"

"Yes. The space ship when ready to start will consist of three separate rockets joined together. The lowest rocket, using pure alcohol, operates the whole system from the start to the

speed of about two thousand meters a second. As soon as it is burned out, it is uncoupled and cast off. Then the second auxiliary rocket begins to act, increasing the speed still more by its mixture of alcohol and hydrogen; after its tanks are empty, it is likewise cast off. There finally remains the pure hydrogen rocket, in which of course are the passengers, the instruments, and the means for controlling the ship. Thus only a small part of the machine which starts, the egg-shaped point, in fact, will make the flight into infinity as the actual space ship. On return to the earth it will have not more than a sixtieth part of the original total weight. In this way for every kilogram of essential weight there is so great a quantity of fuel and consequently of energy units that the safe passage of the limit of the earth's attraction is beyond question."

THE SPACE SUIT

WHILE Suchinow was explaining this to the financier, Sam came over to Kort.

"There is one thing I do not yet understand, Gus. How in the world can a person live in a space ship, in which he has none of the prerequisites for existence, air, pressure, heat, and even weight?"

"Those are the smallest difficulties, Uncle Sam! I simply take along a bit of the earth—with everything that pertains to life, including, of course, tobacco. You should rather ask how the exact investigation of the moon is to be managed!"

"What!" Suchinow took a hand in the conversation. "You intend to land on the moon?"

"Not on the first trip; that concerns only Skoryna. I intend to on my second expedition. Naturally the crew must be able to leave the space ship."

"On the airless moon?"

"Not only on the moon but also during the trip through space, sir!"

"Isn't that a mere fancy?" said the Russian skeptically. He regarded the scheme as madness.

Kort opened the doors of a chamber built in the wall, entirely finished in rubber and provided with an airtight door.

"Two things (aside from cold, which can be overcome) seem to make a stay in space impossible for human beings: the absence of pressure and the lack of air. I am going to pump the air from this room, which really amounts to nothing more than a laboratory flask on a large scale, so that the interior will be like airless and pressureless space."

With great excitement the visitors watched Kort take from a drawer a bundle, which he opened up.

"This is a suit made of rubberized leather, like a diving suit, and absolutely airtight. By means of a special air magazine so much air is constantly produced in the suit that there is a constant pressure of one atmosphere, regardless of the external pressure.

"Perhaps one of you would be so kind as to put on the suit. Unfortunately, I cannot be the subject of the experiment, since I have to manage the exhausts."

UNCLE SAM surveyed the costume and the helmet which screwed on, but at once drew back when Kort nodded encouragingly to him. He was glad to leave it to the Russian to be the subject of the test.

Suchinow silently slipped into the costume and allowed Kort to screw on the helmet with the oxygen containers. Then he placed himself in the centre of the chamber. In one of his leather-covered hands Kort placed a burning candle. Then he closed the door, through the glass window of

which all the proceedings could be witnessed. They could clearly hear an electric bell in the chamber, which Kort switched on.

The pump began to work. The candle flickered and went out. The bell seemed to sound fainter and fainter, though the clapper kept on striking. Kort shut off the pump.

"Now, except for weight and heat, the same conditions prevail in this chamber as in space. Yet Mr. Suchinow, with whom we cannot communicate at present, certainly feels all right."

Sam looked through the window and laughed out loud. In fact, Suchinow presented a very comical appearance. The suit had swelled to its fullest extent and had taken on a shape much like that of the favorite rubber dolls of festival times.

The expansive round figure in the chamber was walking back and forth, swinging its arms up and down, jumping in the air, shadow-boxing a little, and removing all doubt about its being in full possession of its powers.

Kort opened a little valve. The air rushed into the chamber, the bell sounded again, and the fantastic figure resumed its normal appearance.

"I congratulate you!" said Suchinow, when he had removed the suit. "It is very probably possible to remain in airless space in this pneumatic suit. But how do you propose to have a person move in space, since he is subject to no force of attraction and accordingly has no weight?"

"Certainly the absence of any pressure will at first be confusing to the passengers. Still we can get used to that. And after all it makes no difference whether the crew floats weightlessly about inside the ship or hovers like angels outside. There is in any case no weight. There is also the

point that leaving my ship is absolutely essential in order to save the rocket; besides that, I intend to spend part, maybe even most, of the trip on the wings of the ship."

"Your ship has wings?" said Suchinow, passing to another point. "Why wings, which are entirely useless in space in the absence of a supporting medium, and only represent needless weight?"

"To be sure, the wings have no significance for the actual flight through space; they neither help nor harm. But even at the start they are a welcome aid to carry the space ship like an airplane above the lowest dense layers of air. Their most important function, however, is in landing. The ship on returning to earth enters the atmosphere at a cosmic speed and must be braked. If that is managed by simple recoil shots, landing would require the same tremendous amount of energy as starting. On the other hand, a space ship provided with wings can support itself in the air just like an airplane—first of all in the thin uppermost layers. It will enter almost parallel to the surface of the earth, keep sinking into denser layers, and gradually exhaust its speed by air resistance in as long a braking run as desired. Once its speed is reduced to two hundred meters a second, it can manoeuvre like an airplane and come down in a gentle glide to any desired point on earth, that is to say, the starting place."

KORT'S PURPOSE

VACARESCU had until now remained silent and had limited himself to listening to Suchinow's brief translations. Suddenly he stepped up to Kort and questioned him in French, a language which Kort understood very well but could not speak sufficiently fluently:

"Sir, what is the final purpose of your invention?"

"The final purpose?" answered Kort with gleaming eyes. "As my final purpose I intend to render the inexhaustible heat energy of the sun serviceable for mankind. Far out in space, at the limit of the earth's gravity, power stations shall arise, immense solar reflectors, making possible the concentration of gigantic amounts of energy at any desired spot on earth. The vast stretches of frozen polar lands can then be made fertile territory; fertile landscapes could be made barren wastes. Mankind shall be made independent of the decreasing coal supply of the earth, and any preparation for war can be nipped in the bud. Wealth and happiness shall come to the earth and let a joyful human race develop in unity and freedom. That, sir, is the final purpose of my invention!"

Old Sam did not trust his ears, when he heard these words. Was there more in Kort than just the cool and calculating technician?

"Gus!" said he, pressing his brother-in-law's hand. "Every day you furnish new surprises!"

"May I now invite you to follow me to the site of construction?" said Kort, turning to Suchinow, who was talking eagerly with Vacarescu.

On the landing place by the lake there was great activity. From a distance they could hear the concrete mixers. Little tipcarts rolled up to the separate points of construction and poured their moist contents into the forms. Most of the supports of the runway were already prepared.

Suchinow seemed greatly surprised at the length of the arrangement. But Kort reminded him of the airplane wings.

"For the starting giant airship," said he, "it is necessary to provide a

correspondingly long runway. My rocket does not rise vertically but goes up obliquely like any airplane. One hundred meters run, which is ample for an airplane, is naturally insufficient for a space ship with the dimensions of an airship."

Above the lower part of the runway the iron framework of the mighty space ship hangar was already erected, similar to great airship sheds but much wider, in view of the projecting wings.

As yet nothing was to be seen of the space ship itself. The separate parts were being constructed in various divisions of the Victoria works and in great measure had not even been begun, because of the lack of capital.

Suchinow asked another series of questions, part of which Kort answered evasively or not at all, when they concerned things which he thought he should keep secret. Nevertheless Suchinow was convinced that Kort's space ship removed all doubt as to the practicability of the plans made.

"Regarding business matters," said Kort, as the two foreigners were taking their leave, "I request you to discuss things with my representative, whose address you will find on this card. Dr. Kramer has all necessary instructions and power to settle matters."

With a cool ceremonial bow Vacarescu and Suchinow entered the automobile and drove off without turning around.

"Gus," remarked Uncle Sam, when the car had disappeared, "you are splendid! I simply wonder that this green-dotted Russian did not burst with anger. He must have seen that he can simply pack up his little rocket, when you get started."

"Do you think that this Vacarescu

will really give the money?" said Kort, slightly worried.

"Gus, just let old Sam look out for such details. Do you think I have been travelling around for weeks, to let the man escape in the last minute? You just stay quietly at your construction work. I am going right over to see Dr. Kramer, and I shall keep my eyes on Mr. Vacarescu."

CHAPTER XIII

READY TO START

MONTHS had passed. An unusually severe but dry winter had favored the work at Lake Conway. Even though Kort made the unwelcome discovery, while the work was going on, that he had considerably underestimated the cost, sufficient means were now coming in through subscriptions, which along with Vacarescu's loan eliminated all financial worries. The appeal from the skies had had its effect. The state also was now giving much assistance to the work by providing men who were out of employment, the state funds taking care of their pay.

Kort was tirelessly active. Being temporarily released from his position as chief engineer at the Victoria Airport, he could devote all his time and strength to the construction. It was due to his untiring zeal and his arrangements on a grand scale that the space ship was already close to completion by the end of January. Kort would not grant himself any rest, as long as he knew that Skoryna was in danger.

For almost five months the rocket had been circling about the moon, unchanged in its orbit. The horrible fate of the pioneer of spatial navigation kept the world excited.

Was he still alive? Asking this question was equivalent to answering

it in the negative. Yet Kort did not give up hope.

No more light-signals from the rocket had been seen, though every observatory in the world was carefully examining the vicinity of the moon, when ever the space ship entered the shadow of either the earth or the moon. Accordingly Skoryna's fate was extremely uncertain, and the world waited impatiently for Kort's rescue expedition.

Old Sam, who had for the time being suppressed his wanderlust and rented furnished rooms near the airport, where he hoped to revive again his former medical practice, could not entirely hide his negative view regarding the question of spatial navigation. Nevertheless, he helped out, so far as he could, in speeding up the work and the preparations. For him the work was no longer a debatable incident of technical progress; it was the life work of his brother-in-law. Besides that, the enterprise had a noble humane purpose to fulfill, to which philosophical debates regarding timeliness and necessity had to yield.

When Kort began to collect the crew of the ship and sent Sam an official invitation to make the trip as ship's doctor, the old cosmopolite had a hard problem to solve. It was certainly not cowardice which made him hesitate in his decision; it was rather a drawing back before the grandiose immensity of the enterprise, the hesitancy of a proud and modest character at the threshold of prominence.

Kort knew how to clear up his doubts.

"Uncle Sam," said he one evening, when they were sitting together before the stove in Finkle's abode, "do you remember that splendid summer evening on the lake, shortly after your return, when you greeted the sunlit

Zorona and were so happy to see your old home again?"

"Certainly, the evening was too beautiful for me to forget it ever."

"Do you recall that you spoke of an insignificant human being who rashly wishes to leave mother earth and of a breath which can extinguish this person out there in space?"

Kort had such a worried look that Sam could not help grinning.

"Another reason for me to remain quietly on earth," he replied, with a face which tried to be serious. "Isn't it enough for one of us to be lost?"

Kort looked up in surprise. For some time Sam enjoyed his brother-in-law's amazement and then added:

"I understand all right, Gus. If you are putting on such pressure, then—oh, well, for Heaven's sake build a little ice chest in your great palace and don't venture to nail up any placards with the enchanting wording: 'No smoking!'"

"Then you are coming along, Uncle Sam?" cried Kort joyfully, seizing his hand.

"What else can I do!" grumbled Sam, pulling his hand away. Then he went over to Mother Barbara's for a glass of beer, to think over the new state of affairs.

THE last week before the start passed rapidly. First of all, the crew had to be trained and tested as to their suitability. Conditions were to be anticipated on the coming trip subject to which no person on earth had ever lived, the effect of which upon an individual's physical system no one could foresee. Even if it might be assumed that the absence of gravity during the free flight in space would produce no very disadvantageous results, there was the danger of the excessively increased pressure during the ascent. Since medical ex-

perience was not sufficient to express a certain judgment regarding physical powers of resistance to this unwonted phenomenon, Kort—to be absolutely sure—constructed a testing apparatus like a merry-go-round, on which the candidates were revolved at high speed in a circular path. In this case centrifugal force exerted a pressure on the occupants of the merry-go-round, which could be increased at will and observed in its effect on those being tested.

Thus Kort had selected a useful little group of ten aeronautical workers, all persons whom he had learned to know and to value as skillful and dependable during his years of activity at the airport.

As second navigation officer he took a well tried airship operator named Bergen, who previously, when the CO-1 went to America, had for the first time conducted the taking of bearings by radio and had thereby won a name for himself. Bergen gave a regular jump of joy when he was informed of his position on the space ship.

"Didn't I always say," he remarked radiantly to Kort, who on principle was taking only unmarried men, "marrying is a fine thing, if someone else is doing it!"

"Here's to true comradeship, Mr. Bergen!" replied Kort. He knew that he could rely on this man.

The ascent was fixed for the third of February.

Days beforehand the starting place was continually surrounded by movie photographers, reporters, and curious persons, who occasionally sneaked through the fence and tried to get a closer view of the space ship. But the guards were on the watch and escorted every intruder none too gently from the forbidden zone.

Kort could no longer keep away

from interviewers of all nations, who managed to find him everywhere and at the most incredible hours, until Sam offered to receive these people and to satisfy them on Kort's behalf. As a matter of fact, many newspapers published the yarns which Sam dictated to the journalists who wanted a sensation.

FINAL INSPECTION

AT last the expected day arrived. Very early in the morning special trains from all directions brought huge swarms of people to the quiet little city. In dense unbroken lines the crowd poured out to the starting place, which was shut off in a wide enclosure by a strong body of soldiers and mounted police. Packed in further than the eye could see, the crowd pushed back and forth in a constant wavelike motion. The newcomers pushed forward and did not let the lucky ones who were established on camp stools right behind the fence enjoy their favorable position. There was a constant crowding and pushing, so that often there resulted jams dangerous to life and limb, so the ambulance detachment had its hands full.

Yet the possessors of the best places could see nothing but the immense bare shed which concealed the space ship, together with the rails of the runway, coming from the end of the shed and spanning the depressions like a railway trestle in its course up the eastern slope.

The entire crew was already on board and was taking in the last supplies under Bergen's command. Slowly the trucks crept through the screaming crowd and unloaded, before the little side door of the shed, chests, boxes, and bales, all of which disappeared one by one into the dark opening. After the baggage came a cage containing a pretty little parrot,

Bergen's mascot, which was uttering loud cries of protest. Last of all appeared a crafty movie photographer, who had hidden among the baggage, to take close-ups during the unloading, and was now protecting his booty amid struggles and yells.

Kort and Sam had kept the last few days on earth free and had gone out on the lake in a little boat. Silently they looked over to the snow-covered mountains and woods of their home and said a wordless good-bye. They were taking leave not only of their native mountains and woods but also of mother earth, of solid ground, of air and heat, of the realm of mankind.

What would the future hours bring? Victory or destruction? Would they ever again breathe the air of earth and feel the ground under their feet and sense the charm of fragrant spring? Or were they destined to die in darkness and cold and dreadful loneliness?

Were they to be like Skoryna?

The thought of this wretched being awakened Kort from his reverie. He shook off the soft emotions which were threatening to overcome him in this memorable hour of departure.

THE early twilight of winter was commencing, when Kort and Sam made their appearance, accompanied by Director Herst, a prominent representative of the government, and a small group of carefully selected newspaper correspondents. The crowd became excited. "There is Kort!" went as quickly as lightning from one to another, and there was a thunder of applause as the inventor's car passed into the enclosure.

Bergen stepped up to Kort. "Ready for the start!" he said in military style.

"Thank you!" said Kort, briefly but in a friendly tone. Then he led his

guests into the shed, which was illuminated as bright as day by electric reflectors.

There lay the mighty space ship. It consisted of a gigantic steel hull, shaped somewhat like a cigar, ending in a blunt point with windows all around. The rear end of this giant cigar (half of it painted black, longitudinally, and half brightly polished) showed the opening of the exhaust pipe of the auxiliary rocket between the stabilizing wings. The men looked as tiny as ants beside the smooth hull of the fantastic flying machine.

At a sign from Kort the doors opened, dazzling lights flashed out into the darkness and driven by unseen forces the ship slowly began to move and glided majestically into the open on rollers moving on the rails of the runway.

A loud hurrah from the vast throng greeted the colossus as it glided out for its first emergence from the protecting shed. Then it stood still again, but within there was great activity. The wings moved and spread out to their full extent. The shining grub was unfolding its wings and becoming an immense dragonfly with three pairs of wings, one behind the other. On the point of the forward section the naval flag was blowing in the breeze.

The onlookers became silent. This then was the fabulous machine about which all the newspapers had talked for months. This was the sky ship of steel and lead which was to carry brave men beyond their native earth, which was destined to realize the thousand year-old dream of humanity of conquering the sidereal world. Inspiration and ability—would they conquer the might of the earth and the sun?

Kort led his guests into the interior of the forward section of the ship by way of a gangplank which was

quickly set up. The opening in the steel wall led to a small chamber the size of an elevator.

"This chamber," the engineer explained, "is the one and only entrance to the parts of the ship which are at all accessible. Its two pneumatic doors make possible during the flight leaving the ship in this manner: first coming into the chamber through the inner door, then closing this door and opening the outside one. Thus, during the entering and leaving the air pressure in the interior is not affected. Naturally it is not possible to leave the ship without a 'space' suit. The absence of pressure in space would at once kill a man."

Through this chamber the guests reached a circular room illuminated with electric light, a sort of vestibule or hallway.

"This is the centre of the forward part of the ship," continued Kort, in the course of his explanations, "around which are located the cabins, lavatory, dining room, smoking room, and electric kitchen. Below are the tanks of the hydrogen rocket."

"Below?" inquired one of the reporters, doubting whether he had heard correctly.

"That is so," said Kort with a smile. "I must first explain to you what is meant here by the terms up and down. By 'down' we naturally mean the direction in which pressure acts; during the ascent, as long as the rocket is in action, that is the direction from the bow to the exhaust. In our language on shipboard, therefore, the bow is always 'up', and the exhaust pipe, the rear end of the ship, is always 'down'. Of course this seems strange to you, now that we are in a horizontal position. But if you want to hold fast to the idea of 'up' and 'down', the longitudinal axis of the ship is the only guide to a vertical di-

rection. In the present gravitational conditions the position of the tanks could be better described as 'behind the cabins'. Moreover, these tanks, together with the vaporization chambers and the exhaust pipes, are not accessible from within and are managed from the control point by means of electric control."

Kort turned to a circular passage which opened into the central room.

"This passage leads to the extreme tip of the ship, that is to say, 'up', in our vocabulary."

Cautiously the men passed through the opening.

"But if the passageway is pointed upward," put in one of them, "I do not understand how. . . ."

"How anybody is to go up and down, you mean? You will find no steps anywhere in the entire ship, only easily movable rope ladders, which can be put up in case of need. You must not forget that the greatest part of the trip takes place in partial or complete absence of weight. Steps would then be only hindrances. Solid hand-holds on all the walls and floors are the best aids to progress from one point to another. During the ascent, the only time when there is a real and powerful pressure downward, nobody has anything to do in the passages."

LAST MOMENTS

IN the meantime Kort and the visitors had reached the tip of the ship, an odd looking room located at this point, resembling in form a truncated cone, the round walls being equipped by strong glass windows all around.

"Here is where the ship is controlled. The multiplicity of apparatus which you see fastened to the walls here with strong springs, I cannot explain in much detail in the short time

available. In the main switchboard the wires of all the measuring devices come together, the results of which are registered by electric currents. A gyroscopic system, in place of the compass which is of no use here, shows the momentary position of the ship and its changes in direction. Three pressure springs, corresponding to the three coordinates of space, reproduce the components of acceleration which are likewise carried by electric currents to measuring instruments and combined by automatic planimeters. Other apparatus automatically calculates from the acceleration the speed attained and consequently the distance travelled at any time. A series of scales, connected with the manometers, hydrometers, and the exterior aneroid barometers (all of which are built into the ship at various points), give a complete and easily observable picture of the entire pressure condition both inside and outside the ship. The equipment for navigation is supplemented by optical and astronomical instruments of special kinds. The various levers and switches control the wings, the stabilizers, the pumps, and various other apparatus. With a slight touch the entire ship may be controlled.

"The most important device is this strong lever, which controls the access of fuel to the exhausts. It is, so to speak, the gas lever. Above it is the scale, the pointer of which indicates the absolute acceleration at any moment. The brilliant red line upon it is the marker of the border line between life and death. As long as the increase in speed per second is below forty meters, there is no direct danger to the lives of the crew. But if the pointer rises much above this limit, which is sharply indicated by the red line, we shall in all probability be crushed by the frightful pressure."

WITH a slight shudder the guests examined the scales and levers and carefully refrained from touching anything. Great drawing boards with conic section curves, serving for sketching in the flight curves, stood on rotary stands, every bit of solid wall being utilized.

"In the most extreme, that is to say highest, compartment of the tip," said Kort, "a parachute of one hundred and twenty square meters surface is placed, folded together closely. In the most extreme peril, if the engines do not work on landing on earth, it can hold the crew and preserve it from the crash. But I hope that it will never have occasion to be used."

Meanwhile it had become six o'clock.

"Unfortunately I must now ask you to leave the ship. We have only twenty minutes more."

They heeded this request only very unwillingly. There were still so many unanswered questions about the air supply, temperature, steering, the course of flight, and so on. Nevertheless Kort would not give any more explanations and repeated his insistent request.

"Gentlemen," he said, watch in hand, "every second of delay in starting will alter the course of the ship and put off for days the rescue of the rocket. I beg of you to consider this!"

When Kort again appeared on the gangplank, there was a new outburst of enthusiasm. Vainly he tried to quiet the crowd; it was absolutely impossible. He gave up the idea of a speech and took leave of the guests of honor with hearty handshakes.

"Gentlemen," he said simply, "please transmit to mankind my thanks for the active support of my enterprise. I hope that my ship will justify the confidence reposed in me."

Then a member of the crew passed around a tray of full champagne

glasses and quickly disappeared again into the door. Kort raised his glass, and his words rang out loudly and clearly over the wide space:

"As once Geryon, the three-headed winged monster, conducted Dante across the abyss of Hell, thus will *Geryon*, the three-winged space ship, carry us safely over the abysses of space.

"Accordingly let *Geryon* be the name of my ship!—Till we meet again!"

The glasses crashed on the ground, Kort cast off the gangplank, the door closed, the flag on the bow of the ship was taken in, and the reflectors sending lights from the shed were extinguished.

A breathless stillness lay upon the multitude. All eyes were fixed on the monster which was hardly visible in the dusk. Suddenly it glowed in a bright white light; the illumination tubes on the surface of the hull had been switched on. The brightness of day shone over the great enclosure and dazzled the eyes of the onlookers.

After a few seconds there sounded a shot, the signal arranged for the start.

The gigantic flying machine trembled, and a shrill screaming sounded over the fields, so that the people ducked their heads in terror. The upper two auxiliary exhausts had been started, spitting out behind them conical streams of fire. Slowly the space ship moved onto the rails of the runway—slowly for just a moment, for then it was off in a mad dash.

INTO THE INFINITE

QUICKER and ever quicker the ship rushed ahead. After a second it was taking the incline. It raced up the slope with a speed many times that of an express train. In ten seconds it was past the kilometer mark—

and now the brilliant gigantic butterfly was rising, freed from its rollers, freely floating into the night.

It was an overwhelming sight! A sea of yellowish light flooded the densely packed multitude. An outburst of thunderous applause followed the space ship.

As though lifted by spirit hands, the fiery figure sped obliquely upward in its mad course.

Then a thundering and rattling rent the air, so that the people tried to flee in panic terror. Horrified wide open eyes stared at the uncanny spectacle in the air. The rocket was operating at maximum power. The immense main exhaust had flamed out, and a gigantic trail of fire stood out like a comet's tail behind the speeding ship.

A glistening spark fell, already far beyond the chain of hills which framed the eastern shore. It was a little parachute carrying a dispatch box, the last direct greeting of the vanishing *Geryon*.

Nobody heeded it. All eyes were fixed on the fiery comet which, though the work of human hands, was making its luminous path across the evening sky.

The starting place sank into darkness. In the far distance the space ship was floating away, already too remote to illuminate the earth any longer. It cast a ghostly reflection in the waves of the lake.

As yet two minutes had not passed. The *Geryon* now seemed to the beholders nothing but a glowing dot. Then the trail of fire blazed out anew. Councillor Herst looked at his watch.

"Ninety-eight seconds!" he said to his neighbor. "Kort has just cast off the burned out auxiliary rocket and started the second alcohol rocket."

"About how far is the ship now?"

"There might be ninety kilometers between it and us at present."

"Incredible!" murmured the other. "From Lake Conway to Mardon in two minutes!"

"I estimate the *Geryon* now twenty meters above the central Alps. The highest peak of the Himalayas cannot rival that height."

After three more minutes the space ship was visible only to very good eyes as a faint dot on the southeastern sky. It might perhaps be seven hundred kilometers from the starting place.

"Now the ship is racing through the last part of the terrestrial atmosphere. The wings have done their work, for the time being."

The reporters crowded around the director of the airport and carefully noted what he said.

GOOD field glasses still permitted observation of the ship for some time. Then the dot in the heavens vanished. Only the few lucky possessors of a very powerful telescope could follow the *Geryon* any further in its path, which turned more and more to the south, until at about one o'clock it went behind the wooded heights of Rearton, looking at the time like a very faint star in the southwest.

"It is incomprehensible!" said Director Herst, as he was going home. "Just a few hours ago I was standing in this space ship, which now, as a tiny fragment of the earth out in space, is floating between our planet and the moon!"

On the next morning the newspapers had long accounts of the start and the course of the space ship.

"Even if the *Geryon*," it was said there, "seems to move around the earth in a constantly widening spiral, which is an illusion caused by the rotation of the earth, all the observations indicate that its path is exactly

in accordance with the predetermined S-shaped curve of ascent and is directed toward the constellation Aquarius, into which the moon will also enter in three days."

During the first half hour of the ascent some radio messages had been received from the *Geryon*, stating that so far the trip had gone smoothly and without any trouble and that the crew was all right. But these messages had soon ceased, since the transmitter of the space ship could not reach more than six thousand kilometers at most.

On the following evening, at exactly the same time as the start, the *Geryon* reappeared in the eastern sky. But now the little telescopes and other aids to vision were useless. The public had to depend on announcements from astronomical observatories, whose great reflectors easily made out the space ship, now at a distance of almost fifteen diameters of the earth.

Again it rose higher in the heavens, crossed the meridian, and inclined toward the southwest. But before it reached the horizon, the tiny dot suddenly vanished and was seen no more.

Panic terror seized the world, when all the observatories sent announcements agreeing that the *Geryon* was no longer to be found in the sky. There was still hope because of the Suchinow rocket, which had so long remained undiscovered while within the shadow of the earth. People tried to calm themselves by assuming that Kort had doubtless shut off the external lights, in order to save energy.

But on succeeding nights, also the *Geryon* was no longer visible in the heavens. Even the greatest observatories could no longer see anything.

What had happened?

Horror seized mankind. Had infinity swallowed up a second sacrifice as well? To be sure, every night they hoped that the extinguished spark

would shine forth again—but in vain. Kort's space ship had disappeared.

Kort and his faithful men and Skoryna also were regarded as lost—lost forever. A great depression prevailed on earth.

CHAPTER XIV

FIRST MOMENTS

WHEN Kort, after the christening of the *Geryon*, had cast off the gangplank, he closed both the outer and inner doors very carefully and then hurried to the control room, where Bergen was standing at the central switchboard looking at the chronometer.

"Are you all ready for the start?" asked Kort, casting an eye at the instruments and switches.

"Two men are at the generator, one is watching the gasifier, and two are here ready with the flight curves. The other five are at rest, but I am afraid no one is closing his eyes."

"I imagine not. As soon as we are having a free run, you will also be off duty, Bergen." Kort looked around. "Where is Dr. Finkle?"

"He is getting settled in his cabin. Shall I ask him to come to the carrousel?"

Kort nodded and got into his hammock, which was so placed that he could manage all the important switches while lying down. The carpets which had hitherto covered the curved floor had been removed. During the ascent this "floor" would of course become a wall, as soon as the pressure of acceleration overcame that of the earth's attraction. The circular "wall," now behind, would then form the bottom of the room, which was traversed in the middle by a strong round wall, for the switching apparatus. This room resembled a "carrousel" or merry-go-round, closed

in on all sides and now lying on one edge. Consequently the name "carrousel" had already become part of the vocabulary of the ship.

Sam appeared in the carrousel.

"It is really a very comfortable coop which you assigned me, Gus! I feel at home in it already. It is a bit narrow, of course, and I shall have to get used to the hammock way up in the air, but. . ."

"You will enjoy making the ascent here, I am sure!" interrupted Kort. "Please get quickly into the hammock! In two minutes the exhausts will begin to operate, and then woe to anyone who is standing up."

In fright Sam obeyed and climbed into the swaying net.

"All right?" Kort called through the speaking tube to the lower rooms.

"All right!" was the calm reply, as though it were merely the question of an ordinary airship flight.

"Switch on the outside lights!" The order rang through the speaking tube without the slightest trembling of the voice to betray any excitement at the greatness of the moment.

One last glance of examination of the travellers in the carrousel, all lying in their hammocks, and then Kort's eye did not leave the chronometer.

Thirty-two minutes past six. The second hand jumped further—two—five seconds.

Sam squinted sideways through the windows. His glance travelled over the starting place and the crowd of people. He saw a wave of excitement run through the crowd; he saw the emotion of the brightly-lighted faces. No sound, however, entered the hermetically sealed ship from without. Only the measured throbbing of the motor which ran the lights and the high pitched song of the generators came from the engine room to his ears.

The hand progressed—twenty—thirty seconds.

Kort's fingers moved toward the gas lever, touched it, and rested calmly on the handle.

As though hypnotized, Sam stared at the sinewy hand which in the next moment was to snap its fingers at the supreme power of the earth. He actually felt the firm pressure of the fingers on the lever. At lightning speed the events of the last few months passed before his mind's eye—the cares and worries of his brother-in-law, the hunt for Suchinow, Vacarescu, Nataka. . . .

Forty seconds—forty-five seconds—

Then the leader's hand moved. A push of the lever, and something like distant thunder shook the ship. The chronometer sprang back to zero. The hammocks swayed.

The flight into infinity had commenced.

OUTSIDE the starting place was passing by; for an instant Sam saw hats and handkerchiefs waving in a tumult of enthusiasm. Then in the light of the ship, shining tree tops raced by. Further off were the silhouettes of the houses of Freetown, and behind them the surface of Lake Conway gleaming.

Kort moved the ascending control, the wings became oblique; the ship left the ground and rose into the air.

The lower windows were free. A brilliantly lighted strip lay below the ship. The ground seemed to rush back, sinking lower; it shone more weakly and disappeared. Outside the windows it was black night.

Now Kort gave full gas to the main exhaust. The thunder of the expulsion increased, becoming a roaring and crackling, like Hell broken loose. The acceleration indicator crept up the

SFQ

scale and wavered at the point twenty.

Sam was groaning in his hammock, with a tremendous weight pressing on him and squeezing his throat.

Pressure!

Creaking, the springs of the hammocks stretched. The cords tightened around the bodies, which were pulling downward with increased weight. Exhausted, Sam lay in the net, his glance directed straight upward. It was strange—the windows through which he had just been looking at the starry sky were sinking down sideways, while the circular forward wall was approaching and cutting off the view.

With trouble Sam turned his head. In truth, the arched wall of windows now surrounded him on all sides with the flat circular "floor" above and below. The carrousel had assumed its proper position.

Thirty more seconds passed.

"Gus!" panted Sam.

"Yes Uncle Sam?"

"Do you see that dim constellation out there sideways, at the same height as ourselves? There is a yellowish glow all around it. I never saw such an uncanny looking constellation."

Kort cast a rapid glance through the window. "Constellation?" He read the altimeter. "Presumably this constellation is Mandon!"

In amazement Sam wanted to get up, but the tremendous weight threw him back.

"Mandon?" he groaned. "Have you lost your senses? Since when did cities stick up on the sky?"

Kort did not answer. He was fixedly regarding the acceleration scale, the indicator of which was slowly receding.

"The auxiliary rocket is burned out, Bergen Uncouple it!"

Bergen's hand had already been on the handle. A slight pressure, and the mighty ship had divided. In an oblique

course the uncoupled rocket rushed back to earth.

Quickly Kort's hands were busy at the gas levers.

"Look out, here comes full gas on the middle rocket!"

The indicator rose again, crossed twenty, hastened by twenty-five to thirty—thirty-one—and wavered at thirty-two, where it stopped. The brilliant red line was at forty.

THREE MINUTES

THE pressure became intolerable. The hammocks sank deeply; the pressure on the men's chests was growing to be frightful. Sam could scarcely breathe now. He tried to raise his hand, but he succeeded only with a great effort, and his arm sank back exhausted, striking his body heavily. It seemed as though mercury were flowing in his veins instead of blood, as though every limb had become four times as heavy, as though four strong men were lying on him and holding him fast. The cords of the hammock were cutting through the pads laid on them, and his back hurt.

Sam asked no more questions. He was struggling for air. His lungs could scarcely raise the weight of his chest. For a time he struggled against the oppressive weight of his limbs, tried to say something, to cry out, then he sank back irresolutely, overpowered by the uncanny force. He could no longer even desire anything or think of anything. His mind was enveloped in twilight.

Kort was also suffering a great deal from the pressure. Reaching to execute the few simple manipulations of the apparatus became a test of strength. Only with the most extreme effort did his muscles succeed in extending his arm, to bring his hand to the lever.

The speedometer indicated six thousand meters a second. Again the acceleration indicator moved back.

"Detach the alcohol rocket!" mumbled Kort.

For the second time the ship divided. The pure hydrogen rocket flamed forth and spit its glowing vapors backward at an incredible speed.

The indicator came dangerously close to the red line. The machine was developing its highest power.

Only five minutes had actually passed since the start—an eternity to the crew. The raging noise of the exhaust was silent. The *Geryon* was already racing through heights, the unusually thin air of which could no longer convey sound.

There were still three minutes to hold out; then the speed would be attained which would carry the ship outside the limits of the earth's force. The speedometer rose evenly—seven thousand—eight thousand meters a second.

A horrible thought passed through Kort's mind. What if he did not manage to summon up strength enough to depress the gas lever!

Then with the high acceleration the speed would keep increasing more and more, until at length even the mighty supplies of the hydrogen rocket would be exhausted. Then, without any fuel at all, there would be no return possible. The ship would be precipitated beyond the orbit of the earth, rushing through the planetary realms in a mad course—on a hyperbolic path, running into infinity. In less than half an hour a speed would be reached which would carry the ship for ever beyond the solar system.

It was the seventh minute. The speeding ship traversed nine thousand meters every second.

Slowly and painfully Kort raised

his arm, supporting it wearily in one of the slings hanging down from the ceiling. There was only a hand's breadth between his fingers and the gas lever. Painfully Kort fought for every centimeter. His strength threatened to leave him. For a moment he paused exhausted.

The instrument pitilessly announced a speed of nine thousand eight hundred meters.

Great Heavens, only two seconds remained! A push forward, his hand grasped the handle, and the lever flew back.

Cold sweat stood on Kort's brow. The fearful exertion had used up the last remnant of his strength.

The acceleration indicator sank, crossed the twenty line, went below ten, and settled at the line marking three meters a second increase in speed.

The pressure sank as rapidly as it had come.

The chronometer showed eight minutes.

CHAPTER XV

BEYOND THE EARTH

FOR a while nothing stirred in the "carrousel". The silence was broken only by the heavy breathing of the five men.

Sam opened his eyes and looked about him. The lights were burning, and the windows were black yawning gulfs like the open jaws of beasts of prey.

He tried to sit up. He could do so: the mercury in his veins was gone. Comfortably he stretched and turned. It was a pleasure to be able to move again, to have once more attained mastery over his muscles. He drew a breath of relief, as after waking from a bad dream.

"Gus!" he cried. "Where are we now?"

There was no reply.

He climbed out of the hammock and walked over to his brother-in-law, stepping cautiously and testing the reliability of his legs. But what was this? He could hardly keep his balance. At any quick motion he threatened to fall over forward. He felt that he was remarkably light. Or was it the natural reaction from the dreadful pressure that still hurt all his muscles?

Kort lay bathed in sweat. Anxiously Sam rubbed his temples and held a bottle of camphor below his nose. Slowly Kort opened his eyes and gazed around uncomprehendingly. It was only a second before complete consciousness returned to him.

He first glanced at the chronometer. It showed twelve minutes. Quickly he jumped up. Bergen and the two members of the crew had also recovered themselves.

"The hammocks can now be rolled up!" he called to Bergen and then began to study the curves of the recording instruments.

"What a trip!" remarked Sam. "I shall never forget those eight minutes in all my life. All my bones hurt." He felt himself all over carefully. "Nothing seems to be broken."

"Yes, in the long run no human being could endure this pressure. Just take a look below, Bergen, to see whether everything is all right."

"Gus!" began Sam, when Bergen had disappeared. "Where are we now, really?"

Kort inspected the instruments. "Six thousand kilometers headway and almost four thousand in altitude."

"Four thousand in altitude?" repeated Sam. "And Mt. Everest has nine thousand. Well!"

"Yes, but that is in meters! Our unit is the kilometer!"

"Good Lord!" cried the physician. "Then we are—why, we are four hundred times as high as the loftiest point on earth!"

"Certainly!" Kort smiled. "The barometers outside have long been at zero. The atmosphere of the earth is already far behind, and we are now floating in space."

Bergen reported through the speaking tube. "All right below! The dispatch box was released after fifteen seconds. The last radiogram has just been sent!"

"Very good, Bergen, you may now go off duty."

Sam stood at the window and stared out into the black night. "Then we can't see anything more of the earth?"

Kort stepped to his side and adjusted the telescope.

"If you pay good attention, now and then you will be able to make out a gleam of light—perhaps the reflector of some lighthouse or else light signals from a steamer floating down there on the Pacific."

"The Pacific?"

"If it were bright, we could now see the earth from the Philippines to the east coast of France. Apparently we are now approximately over the Persian Gulf."

"Please point the telescope at Bombay for me. I should like to take another look at the place where I lived so long."

Kort laughed loudly. "You are asking a good deal, Uncle Sam." He adjusted the telescope again. "The Indian Ocean must be somewhere in this direction. Perhaps you will succeed in making out the yellow light of the illuminated city. Here's luck to you! But do not imagine that you can influence the night life of India from here."

The telescope was almost horizontal, with a slight inclination downward.

"Bombay, Gus! I want to see Bombay, not Mars!"

"Well then, look through it!"

Sam stepped back in amazement. "Are you trying to make a fool out of me? The earth is down there!" He made a couple of violent gestures with his hand toward the floor.

Kort winked at him, much pleased. "Certainly, Lake Conway is there."

"Well then!"

"And where do you suppose the centre of the earth is to be found?"

"The centre of the earth? I have never been there, but I suppose it is still lower down than Lake Conway."

"There, then!" Kort imitated Finkle's gestures.

"Naturally! Where else?"

"Over there, Uncle Sam!" He pointed obliquely out of the window. "There is the centre of the earth, and in front of it is the Persian Gulf, over which we are at present."

Sam's mouth remained wide open. "The earth up there in the sky?"

"Do not forget," Kort explained, "that we rose at a very acute angle, almost parallel to the surface of the earth. Accordingly we must look for the earth off to one side. The pressure which makes us feel the long axis of the ship to be vertical does not come from the earth but from the force of our rocket exhaust pipes."

Winkle's head went around like a mill wheel.

"If we had risen on the sunny side, that is to say, in the daytime, we could now see the surface of the earth beside us. The northwest edge of the globe would be exactly at our feet, the southeast edge on the contrary would appear almost level, and the entire visible surface would include an angle of almost ninety degrees. Un-

fortunately I cannot provide you with this doubtless grandiose view."

"Then why didn't we ascend by day?"

"Out of regard for terrestrial observations! In that case we should have been somewhere between the earth and the sun during the entire trip and could not have been seen from the earth."

KORT STANDS BY

KORT busied himself with the flight curves and left Sam to his thoughts, which were extremely confused. He stared out into space and tried to represent to himself that over there in the distance was solid ground, with men standing and walking there and never once having the idea of puzzling out whether their legs actually did point to the center of the earth.

After a pause he remarked, "Surely millions of eyes and hundreds of thousands of telescopes are now pointed at us, staring after the speeding point of light. And when I think of the millions of chilly feet and the epidemic of headcolds which will rage tomorrow down there or over there, I think it is a matter of common politeness to answer their attention a bit. You are acting just as though the world had already ceased to concern you."

"Dear Uncle," replied Kort with a smile, "the indications of my instruments are incomparably more interesting and important to me than the black night out there. It will doubtless suffice if you take over this duty of politeness—but I hope not in respect to the cold feet."

"I should say not. On the contrary, I find it actually uncomfortably hot here," groaned Sam. "Can't you have the heat shut off a little?"

"Not this heat, unfortunately. It comes from outside."

"From outside? I thought it was cold in space."

"Certainly! But this heat came from the friction of the air on the outer wall of our ship as it shot through. For your comfort I can assure you that this incubator temperature will not last long. Besides, it has already decreased considerably."

Kort again called Bergen. "What is the temperature down there?"

"Thirty-three degrees Centigrade."

"Well, the thermometer up here indicates thirty-eight. Have some liquid oxygen sprayed around and have the excess-pressure valves opened for a short time."

The heat was actually intolerable, and the evaporating oxygen brought only slight relief.

Sam yawned to his heart's content. "I am surprisingly tired!" he remarked, wiping his forehead. "I do not know why, but I feel as though I had been out all night on a spree. But we have been less than half an hour on the way."

"It will be all right for you to go to sleep, Uncle Sam," said Kort, who knew that this fatigue was not merely due to the heat. "When you wake up again, there will be no more of these unpleasant phenomena which the earth has presented us on parting. For the present there is nothing to be seen but black night. Sleep well, uncle, and if you need anything, ring for the orderly."

Yawning wearily, Sam climbed down the swaying rope ladder, crossed the central room, and entered his cabin. The inviting white hammock attracted him very much, and before he thought of undressing, he sank down and fell at once into a dreamless sleep.

Kort remained at his post, although he had to struggle against the uncanny weariness and limpness of his limbs and suffered from the breathless heat. But as long as the *Geryon* was still floating within the earth's region of power, he dared not entrust the observation of the instruments to anyone else. Data had to be assembled for the future landing maneuvers, and the least negligence might lead to serious consequences.

FROM time to time he depressed the acceleration lever. The pressure decreased proportionately and all objects lost weight. He could have shut off the exhaust completely, since the *Geryon* had long since attained the speed which would safely take it from the reach of the earth. But Kort was insistent on reaching his goal as quickly as possible. He did not give up the hope of finding Skoryna still alive. Perhaps his spark of life was actually at the point of being extinguished, and one single moment sooner or later might decide matters.

The night continued, and the clocks showed the sixth hour since the start. Seventy thousand kilometers, almost double the circumference of the earth, separated the crew of the space ship from mankind. Unchanged deep night surrounded the ship, and nothing more was to be seen of the earth. Only a wide starless place indicated the spot where their native planet was floating.

"Now the presses of the morning papers are working," thought Kort. "People will struggle for the sheets still damp from the press and will eagerly wait for messages from California, in the field of vision of which we now are."

More and more the ship radiated its heat into space. Again they felt free and easy and took a breath of relief,

as though a tremendous pressure had been removed.

Kort smiled as he thought of the surprises in store for all of them in this matter. Since no more danger threatened the *Geryon*, which had escaped from the earth, he no longer hesitated to be relieved by Bergen and to take a few hours' rest.

CHAPTER XVI

A NEW DAY

WHEN Sam awoke, his first glance was at his watch. "Nine o'clock?" he reflected. "What does that mean? Nine in the morning or nine in the evening?"

He quickly performed his toilet and rang for the orderly.

"Just tell me, what time is it now?"

"Half past fourteen."

"What!"

"Half past fourteen, doctor. Here time is reckoned from the ascent and the hours run from zero to twenty-four."

"Where is Mr. Kort?"

"He is sitting with Mr. Bergen in the carrousel and has several times inquired for you, doctor."

Sam hurriedly drank his coffee and then hastened to the control room. Everywhere electric bulbs were burning. There was no sign of daylight.

"Well, that's what I call sleeping, Uncle Sam!" was Kort's merry greeting. "You did not get bed sores, did you?"

"Far from it! I feel wonderfully fresh and gay, and it seems as though I had become ten years younger by this sleep. Have I really slept so long? The boy told me it was fourteen o'clock. My watch says nine, and the night is not over yet. I am now quite lost in the calendar."

"Yes, Uncle Sam, by Freetown local

time it is now certainly nine o'clock. But you had better set your watch by the ship's time. It is foolish to reckon here by the local time of some spot on earth."

"When is it really day in this gloomy region?" asked Sam, who was walking up and down with long springy strides. Occasionally he had to catch his balance in order not to fall.

"As soon as the sun is no longer hidden from us by the earth. That may be in about four hours. In the meantime we must be satisfied with the light of the stars and the moon."

Kort turned out the electric light. Still it was not absolutely dark in the room. There came in at the side a faint silvery light, which cast great shadows and would have sufficed for reading a newspaper, in case of need.

"Yonder is the moon, though only the half disk. If it were full we could not complain about darkness. The stars also give a perceptible illumination."

In fact the stars were radiating a quiet even light, without twinkling, much brighter than on earth, because there the dense atmosphere absorbs a great deal of light.

"It is not so simple to find your way here in the sky," continued Kort. "The constellations familiar to us are almost effaced by the great number of small faint stars which on earth cannot be seen with the naked eye on account of the air. In this swarm back there," said he, pointing diagonally upward with his hand, "you will recognize with some difficulty the constellation of the Little Bear (Little Dipper), in the tail of which is the pole star, around which the entire sky seems to revolve, as viewed from the earth. For us it has lost its central position and remains only a welcome aid in locating the axis of the earth

and thereby the earth's orbit, the ecliptic."

In a hasty sketch he further explained the paths of the earth, the moon, and the space ship. Sam was amazed.

"Then the rotation of the sky has ceased for us?"

"As long as the *Geryon* does not rotate," Kort agreed, "no star either rises or sets for us. Of course the moon does not, either, or for that matter the sun, once it comes out from behind the earth."

"Vitruvius once said: 'The sky is that which unendingly revolves about the earth and the sea on a fixed axis.' With this idea the good man went to his grave, and for centuries he was regarded as one of the world's wise men. It is too bad that we cannot invite this learned man to visit us for a quarter of an hour. He would experience something!"

Bergen interrupted the conversation: "Shall I check the speed still more, Mr. Kort?"

"What is the speed?"

"Two thousand meters a second."

"For the present let the upper auxiliary exhaust work with one-quarter power. Otherwise the speed would decrease too rapidly."

"Two thousand meters speed?" put in Sam. "Isn't that a good deal less than right after the start?"

"Certainly. At the end of the eighth minute we had reached the parabolic speed suitable for that altitude, ten thousand meters a second. Naturally this speed does not remain constant, but decreases under the influence of the attraction of the earth, at first quickly and then more and more slowly, just as with a stone which is thrown up in the air. But before it is entirely used up, the limit of gravity between the earth and the moon is reached—that is to say, the distance

from the earth at which the attraction of the moon begins to be stronger. Then the ship does not fall back to the earth but to the moon.

"This is the whole secret of pushing out into space, just giving a ship this parabolic speed. Then the flyer goes on by itself."

"Well, that is very simple! But why don't we feel anything now of the speed which is still great?"

"What we so keenly felt during the ascent was the *acceleration*, not the speed, which is not at all perceptible. In your consultation room in Free-town did you ever feel that you were at all times going in the earth's orbit around the sun at the frightful rate of thirty kilometers a second?"

"Does the earth travel thirty thousand meters a second?" Dr. Finkle became eager, and his interest in astronomy took a visible increase.

"A splendid speed, isn't it?"

Sam's brow wrinkled. "But it doesn't agree, Gus!"

"How so?"

"Where are we going to arrive with our *Geryon*, which is now making only two thousand meters a second, if I just heard correctly? Won't we be so far behind the speeding earth in a very few minutes that catching up will be out of the question?"

"At the first glance, Uncle Sam, what you say seems to be correct. The circumstances are even more unfavorable. It is not only the earth that runs away from us, according to your theory; it is well known that the sun, also, along with all its planets is moving away in the direction of the constellation Hercules, this being at a speed of about twenty kilometers a second."

"Good Heavens, where are we going to arrive?"

"And if we assume," Kort proceeded, "that the sun likewise rotates

about a centre which is also moving, then the whole business becomes very complicated, doesn't it?"

A STOWAWAY

THERE was a roguish smile on his face. Sam thought hard. He could find no other solution than that the "*Geryon*" needed to go faster than two kilometers a second.

"Don't wrack your brains any more, Uncle Sam! I frankly confess to you that I myself have no idea at what absolute speed, in case there is such a thing at all, our ship is travelling in space. It does not matter at all."

"It matters to me whether Mother Earth escapes us for ever or not. I should not care to stay for all time in your splendid machine, travelling about in the least known regions of space."

Sam seemed to feel a little discomfort, though he said to himself that there must be some error in his calculation.

"Don't worry! The earth is not getting away from us. How shall I explain it to you? In the earth-moon system we have the speed calculated and for the time being nothing else concerns us. You will best understand by an example."

Kort reflected for a while. Then he continued:

"Imagine a dining car in a Pullman train. On the ceiling of the car is an electric fan. On this is a small caterpillar. Do you follow me, uncle?"

"Up to this point!"

"All right! This caterpillar now crawls from the extreme tip of a blade of the fan to the hub at the maximum speed that it can attain by crawling. It will then reach its goal in a very definite time. It does not need to bother its head about describing a spiral course on account of the rota-

tion of the fan, besides being moved forward by the motion of the train, whirled around by the rotating earth, carried along in the orbit of the earth about the sun, and so on.

"Well, just tell me the absolute velocity of the caterpillar and the kind of curve in which it moves!"

Sam scratched his head and did not reply.

"That is exactly the case with us. The blade of the fan is our earth-moon system, and so far as I am concerned the course of the train corresponds to the motion of the earth.

"If the caterpillar wanted to leave the fan to enjoy a bouquet placed on one of the tables, it would certainly have to take into account the motion of the fan; if it even wanted to leave the dining car, because things looked better in the green meadow, it would suddenly perceive and have to take into account that the train was rushing through the world.

"That is just the case with us. If we wanted to go to Mars, then we should have to take into account, beyond any doubt, the orbit of the earth, in order to get from it to the orbit of the neighboring planet.

"What did you say months ago? It is all a question of the relation in which one stands to things. How right you were, Uncle Sam! Here, too, it depends on the viewpoint from which one regards things. Everything is relative in the world, even the purely material things.

"Do you understand now that I do not know the absolute course of our *Geryon*, and that there is no such thing at all?"

HOW simple it all sounded! Sam already regretted his silly question and determined henceforth to present his theories more carefully. He could only with difficulty rid him-

self of his earthly ideas and views. It was hard for him to imagine that phenomena which are incontestable and taken for granted on earth, about which nobody thinks at all, were fundamentally altered here or even made nonsensical.

For a long time he stood at the windows, letting the pure noble world of stars act upon him, while his pensive thoughts were scattered like cosmic dust. Thus the time passed. No experience and no event could disturb the stillness of their cosmos, unless it came from the little group of earthly men. And this even, which surprised all of them without exception, was not long delayed.

From the supply room came violent calls and yells, quick steps sounded, and a sailor rushed excitedly into the control room.

"Mr. Kort," he panted. "There is a stowaway on board! He was hidden among the boxes in the supply room. The cook just found him. He refuses to answer our questions and only wants to speak with you."

Berger jumped up in amazement. "How was this possible? Have the entire crew mustered in the mess room. Woe to the guards that let this man sneak in!"

"Don't get excited, Bergen!" said Kort. "First we will listen to the man himself. Of course, if there has been a gross neglect of duty, I shall impose a severe punishment. Bring in the stranger!"

Pushed along by powerful shoves, a man stumbled up the ladder. Kort at once recognized in him one of the reporters to whom he had shown the ship shortly before the start. He had been struck by the man's thick, dark full beard, entirely out of style, which grew over his whole face and now hung down to his breast in tangled strands.

Apparently the bold man had taken advantage of an unguarded moment to hide himself, in order to take the trip and be able to furnish his paper with accurate accounts of the journey. He seemed to be in bad shape. He was all used up and bleeding from many cuts, and he could scarcely stand up. Since no springy hammock had protected him during the ascent, he must have been injured by the pressure.

"Your adventure may cost you dearly, sir!" said Kort to the intruder. "Apparently you do not know that I have life and death power over all the occupants of my ship! How did you get into the *Geryon*?"

"I shall give you all the explanation you want, Mr. Kort, in private!" whispered the man, smoothing his disordered beard. The voice was familiar to Kort. This Jewish accent he had heard not very long ago. A suspicion passed through his mind.

"Mr. Bergen," he ordered, "Just take the crew for a while to the mess room."

When Kort was alone with Sam and the stranger, he switched on the light, walked coolly up to the reporter, and with a jerk pulled off his beard, which was false.

"Why did you do it, Mr. Suchinow?"

The green-spotted face of the Russian was unmoved.

"Your trip concerns Skoryna's rescue, Mr. Kort. You would have refused my request to be taken along. But I have to be with this expedition. What else could I do but use a trick? I purchased the card of one of the favored reporters; this unworthy being sold it to me for a not excessive sum. That is all."

Sam hardly trusted his eyes when he saw this man before him. "Have you forgotten our agreements," he whispered to Suchinow in Rouma-

nian. "You gave me your word that time in Budapest."

"Not to undertake anything against Kort," put in Suchinow, likewise in Roumanian. "I have kept my word and I am still keeping it!"

KORT walked thoughtfully up and down. What did this man want here? He could imprison him or kill him, not being accountable to any court on earth.

"But why did you have to be on this expedition? If you were impelled by scientific interest, then you certainly had a chance to traverse space in your own rocket."

"My contract with the Transcosmos Company did not permit me to go in the rocket. But you are right, it is less interest in spatial navigation itself that impelled me to this adventure than the special aim of this trip—the rescue of Skoryna."

"For which your personal presence was totally unnecessary, Mr. Suchinow. I am inclined to treat you as a prisoner."

"I know that my life is in your hands. Do as you see fit. In a short time you will understand what actually caused me to intrude into your ship. For the present, please excuse me from further explanations. That is all I ask."

"Very well! For the time being I shall assign you a cabin which you will not leave without my special permission."

Suchinow bowed slightly. "Thank you, Mr. Kort."

Kort telephoned to Bergen, who at once appeared.

"Your mind may be at ease, Mr. Bergen. There is no fault to be found with either yourself or the crew. My own carelessness made it possible for this gentleman to sneak on board. He

is a French reporter. Monsieu Valé is for the present my prisoner. Take him to the extra cabin and look out for him.

"And one more thing, Bergen! Please understand that I will not allow Monsieur Valé to be annoyed by the crew in any way."

When Suchinow was gone, Sam gave vent to his dissatisfaction. "What a shameless fellow! Wasn't it enough that he should use Nataalka to . . ." he suddenly stopped and then went on quickly: "He certainly cannot complain of lack of courtesy on your part. Why were you so gentle with him, Gus?"

"Because there was no point in being otherwise. Here he is, and I cannot have him put ashore. I am also convinced that he has no hostile purpose. What could he do? Any move directed against myself or the ship would plunge him to destruction. And I really cannot think what reason he would have to injure me. I guess that this unexpected addition to the number on board is connected with the mystery about which you have forbidden me to speak. So we shall simply wait calmly—there will be an answer to the question."

CHAPTER XVII

FREE FROM GRAVITY

THE next few hours of the trip to the moon passed without any special events. Outside the space ship nothing was to be seen but the stars shining brightly on the black sky and the yellowish disk of the moon, still low on the equator and apparently getting no nearer.

At first it was surprising to Sam that the course of the ship was not actually directed at the moon. But his newly acquired astronomical knowledge made it possible for him to calcu-

late with some difficulty how fast the moon was moving in its orbit.

"By the time we get where the moon will be when we get there, the moon will be there, too!" was the excellent result of his figuring.

Then he withdrew to the smoking room, the only place on shipboard where he could busy himself with his beloved pipe otherwise than platonically. He lay smoking away comfortably in one of the hammocks which were used here as in all of the rooms of the ship. Now for the first time he felt perfectly comfortable. The strict rule against smoking in the carrousel had kept him from feeling a really unmixed joy of living.

The attraction of the distant earth became less and less. The loss in speed became constantly less, and the activity of the rocket exhausts was decreased accordingly. The decreasing pressure was becoming noticeable.

All objects lost weight, apparently. Limbs became free and light, while there was no alteration in the muscular power which was attuned to terrestrial conditions. The engineers playfully lifted in one hand the heavy steel cylinders in which the liquid oxygen was kept, the moving of which had hitherto required a windlass and block and tackle. A joyous existence commenced for the cook in the electric kitchen. He could now drop plates and cups as much as he pleased; they slowly floated down to the floor and were not broken.

Soon these phenomena increased to such an extent that Sam, desiring to finish his rest after smoking, had to pay for his leap from the hammock with a severe bruise. He had struck the cabin ceiling, three meters above the floor. And when he turned the water faucet to wash his hands, the fresh liquid indeed sprayed out into the basin as usual, but the drops re-

bounded, rose into the air, and spread out as a fine vapor all through the room, finally sinking slowly to the floor and moistening everything.

Kort had indeed prepared him for all these phenomena. Yet he could not restrain a slight start, when every heedless step developed into a tremendous jump upward.

"Gently, gently!" he commanded himself. "Don't exert too much force and don't be in a hurry! You will simply get bruised."

His medical interest was awakened by a peculiar pulling sensation in the region of the chest and stomach, by the unusually accelerated beating of the heart, and on the other hand by the striking insensibility to pressure and blows, for establishing which there was ample chance. He conscientiously investigated his body, connected up his observation with the balance-organ of the human system, the chalk bodies floating in the semi-circular canals in the inner ear, made further investigations, and sought for teleological explanations. Sharply and logically he drew his conclusions. He was struck by the clarity of his thoughts and the speed with which his brain worked.

But these bodily phenomena soon lessened. There remained only a certain freedom from all feeling of discomfort, which expressed itself in his splendidly happy and unconcerned frame of mind.

The ladder to the carrousel he took in a single bound without any effort. Going down was changed to a gentle downward glide, without touching the steps. Sam could not help thinking of a dream which he had had incessantly since his youth, which still reappeared at longer or shorter intervals. Mighty swimming strokes with his arms and legs used to lift him in these happy dreams over trees and houses, and he

gently floated down, by making the right motions. This dream had now become reality, something he had never thought possible, but with a difference: his "flight" was here interrupted by the ceiling, which opposed premature and painful limits to it.

The crew now went about in the ship almost exclusively by floating, and frequent cries of pain from the ceiling showed that it is hard for a person not to use the strength given him by nature. Sam could not keep back his laughter. The orderly grinned, the cook, the crew, and everybody showed the most delighted faces. Even Bergen seemed to have got over his anger on account of the stowaway.

"Today I have become twenty years younger, Gus!" cried Sam, as he floated like a ghost into the little casino which was connected with Kort's cabin and served as the officers' mess room.

"Stop right there!" replied Kort with a laugh. "We are not equipped to care for infants."

"It is simply great to travel around the universe this way!"

"Yes, one is tempted to turn somersaults and to slide down banisters like children," remarked Kort, pushing away from the ceiling, which he had approached by a careless move.

"One can rightly sing: 'We led a life free from care!' Free even from gravity!"

THE MYSTERIES OF SPACE

AT dinner there were mad scenes. The soup swam around in the air in tiny drops, until they learned to carry the spoon slowly to the mouth. A slight push on the table leg raised the entire table into the air. The general rising after the meal produced a wild confusion of chairs and persons whirling around in the room. In

among things Bergen's little parrot was fluttering around the lamp, screeching anxiously, and carrying his cage along on his wings. After that the cage had to be tied down, to prevent mishap.

"Just tell me, Gus," cried Sam through the uproar, "how much do I really weigh now?"

Kort tried to suppress his own limitless amusement, which was hard to suit to the dignity of the commander of a ship.

"We now have from nine to ten centimeters acceleration pressure, that is to say, one one-hundredth of the normal gravity on earth. What weighs one hundred pounds on earth is here reduced to one pound. We couldn't get more than a pound and a quarter out of you, Uncle Sam!" He looked at his watch. "It is time for us to go above. I am expecting the sun soon, and we do not want to miss this spectacle!"

Then he turned to Bergen: "Have you extinguished the outside lights?"

"Yes indeed, Mr. Kort!"

"Perhaps there will be a little fright on earth, when the *Geryon* suddenly disappears. But we must be a bit economical with our supplies of energy. Besides, the sun will soon make us visible again."

IN the carrousel the electric light was extinguished except for a small lamp over the switchboard. Kort did not turn on the other lights, since he did not want to interfere with the observations outside. On the windows was the silvery glow of the moonlight, softening the darkness. The location of the earth was only to be distinguished by the dark starless spot, which spread out almost directly below like a hole in the starry canopy.

Kort and Sam sat on chairs screwed to the floor, holding firmly to the arms.

On account of the lack of weight, it would have been otherwise impossible to remain standing quietly at the windows. The slightest movement would have started them floating off.

"Gus," said Sam, breaking the stillness, "there is something else that is not clear to me."

"I am not surprised. A great many events are puzzling to me, too."

"I mean the decrease in weight. If I, as you say, weigh only a pound now, that is no reason for me to float about in the room like an angel. A pound is, after all, a weight that is in the habit of falling to the floor very rapidly."

"That is where you are bringing up a subject which is hard to explain. You must first know that weight is nothing but hindered motion. You know that the earth attracts all bodies. A stone lying on the ground cannot follow this attraction; it presses on what is under it. It has weight which exactly corresponds in value to the acceleration which it would experience if it were not supported. On the surface of the earth this acceleration is the same for all bodies. A stone dropped from a church tower sinks five meters in the first second, fifteen in the second, twenty-five in the third, and so forth—ten meters more every second. To be more exact, nine and eight-tenths meters. From your school days you doubtless recall this figure nine and eight-tenths, which is called the normal acceleration on earth.

"In the first three seconds the stone accordingly falls forty-five meters in all. If the objects in our ship possess only one one-hundredth of their normal weight, in three seconds they fall only the same number of centimeters. But that is no longer falling, simply gentle gliding down."

"I understand perfectly. And does this decrease in weight come from the

greatly weakened attraction of the earth so far off?"

"This is a plausible supposition, but it is not correct. The slight remnant of weight we owe entirely to the activity of the exhaust pipes, which to be sure are directed in the same way as the diminished gravity."

Sam started. "Do you mean that our weight depends merely on your gas lever, and that we will be weightless as soon as you feel inclined to set the lever at zero?"

"That is just what I mean!" agreed Kort calmly.

"But see here! Just consider that you cannot shut off the attraction of the earth at will! Or can you?" cried Sam desperately.

"Of course I cannot!" said the engineer, much amused. "The attraction of the earth is effective, even though it is weak at this distance."

"Now I am eager to see how you will make sense out of this confusion," remarked Sam, shaking his head.

"Listen! If I shut off the gas lever, then the ship and all that is in it yields to the attraction of the earth. It becomes like a freely falling stone, which is not supported and therefore is weightless."

"A fine prospect! Then we would fall back again to Lake Conway!"

"We are saved from that by the high speed which we so painfully secured. We would then describe a gravitational curve—the infinitely prolonged line of a parabola or rather a hyperbola. We would certainly make a free fall, not downward with increasing speed but upward with decreasing speed!"

"Fall upward?" stammered the physician. "Listen, Gus! For Heaven's sake, stop! I am getting dizzy. These 'explanations' will drive me crazy!"

He held his arms out in a defensive

gesture; he had had enough of it. Kort pressed the excited doctor back on his chair and said soothingly:

"Permit me just one more remark, Uncle Sam. Keep this firmly in mind: we are always weightless when nothing influences the *Geryon* in its natural motion, neither mechanical power from within nor air resistance from without, no matter how near we may be to the earth or to any other heavenly body. . . ."

A cry of amazement cut short Kort's conclusion.

"Gus, see this arc of fire down there! The earth!"

A DAWN IN SPACE

DOWN in the depths there was flaming forth a monstrous fiery arc extending halfway around the circle. At the extreme right edge of the earth's disk the sunbeams were appearing, making radiant outshoots in the atmosphere, and flashed in sheaves of light against the dark interior of the earth, the edge of which arose circular and deep black from the sea of light of its *corona*. It looked as though the mighty black disk of the earth—at this distance apparently twelve times the size of the moon and comparing with it like a hen's egg with a pea—had begun to glow at the edge and was shooting out immense sheets of flame.

Insignificant and tiny, the sickle of the moon floated at one side of the vast arc of light of the brightening earth. In amazement the occupants of the ship watched the fabulous spectacle, from the impression of which the dullest soul could not have escaped.

Kort telephoned to the orderly: "I invite Mr. Valé to come to the carousel."

Sam cast a look of understanding at his brother-in-law. It would have been cruel to have kept anyone from this

sight, this impression never to be forgotten.

Suchinow soon appeared, bowed slightly, and sank like the rest into silent wonder.

The splendor of the earth's sickle increased. At the top of the arc the sheaves of light seemed to be uniting into so blindingly brilliant a point that it was painful to look at it—and slowly the sun appeared from behind the earth. It had become impossible to look at the dazzling light without colored glasses.

"Attention! It is daybreak for us!" Kort's call brought their attention back to the ship itself.

Daylight was in the room. From below the sunbeams came in and cast bright yellow spots of light on the circular ceiling. The mats which covered some of the windows were glowing like translucent curtains.

After a trip of eighteen hours in darkness and night, daylight had set in, to remain faithful to the *Geryon* on the rest of the journey. Bright warm sunshine flooded the lighted side of the ship, while the shady side continued in deep darkness. A sunny, ever cloudless day was shining through the windows on the side toward the sun, but the opposite windows were veiled in black night. Day was not like that on earth.

There was no blue sky spread out above the *Geryon*. The firmament, in which the stars were shining peacefully, was deep black. Even very close to the sun one could make out all the stars by merely covering the white hot disk with the thumb. If such a ship had been available to Copernicus, he would not have had to go to his grave without seeing the planet Mercury.

The objects struck directly by the sun's rays—the external frames of the windows, for example—shone with a

supernatural phosphorescent glow, in sharp contrast with the black sky. They reflected the light into the interior of the ship. It had finally escaped the last effect of the earth, its shadow.

CHAPTER XVIII

COLD SPACE

UNCEASINGLY the lonely space ship pursued its course through space, every hour increasing by thousands of kilometers its distance from the earth. The shining crescent of this planet was growing fuller and fuller, showing in plastic form the spherical shape.

So far as there was no hindrance through clouds, it was possible to make out the forms of the continents on the illuminated portion. Their brownish contours were sharply contrasted with the darker oceans. In the regions north of the equator the dull brown of the continents faded into light greys, because of the winter snows in the northern hemisphere. The north pole itself was veiled in the darkness of the polar night.

For hours Sam sat at the eye piece of the great telescope, which was now pointed directly down. He was watching the continents slowly emerge from darkness at the inner side of the crescent of light, pass across the bright part, and then disappear again at the outer edge. The rotation of the earth could be observed as well as the motion of the setting moon can with some patience be followed from the earth. In the telescope, spaces as big as a metropolis appeared as barely perceptible points. Identifying localities was made easier by the shadows of the mighty mountain chains of the Cordilleras, the Alps, the Carpathians, and the Himalayas.

"How fine it would be," he once re-

marked, "if we only had a powerful telescope that could distinguish separate houses down there. Then we could see about things down in Freetown, control the course of airships, and thus be something like a deity. A little turn of the screw, and the eye jumps from Bucharest to New York!"

"Be patient a little while, Uncle Sam, and then you will have this giant telescope at your disposal," replied Kort, moving his arms about and shivering. "As soon as we can leave the *Geryon*, I shall build outside a combination of lenses that will be ten times stronger than the greatest telescopes on earth. There is no dim, light-consuming air to prevent using any enlargements we like. But don't you find it uncomfortably cold?"

In fact, the temperature in the ship had already sunk below the freezing point. The heat evolved during the passage through the atmosphere had long since been radiated into space, and the electric heating devices could no longer replace the constant losses.

"I have a very simple means of producing any desired temperature," continued Kort. "I only need to catch the heat of the sun. But . . ."

"What 'but' is there? It will not hurt the sun to give us a little of its surplus heat."

"Not the sun, of course, but Herst and Vacarescu!"

"For Heaven's sake, Gus, have you lost your reason? What in the world do Herst and Vacarescu gain from our freezing here?"

"Assurance that the *Geryon* still exists."

"I do not understand that."

"It is very simple, just the same. You surely noticed before the ascent that the outer wall and the wings of our ship are painted black on one side, while on the other they are brilliantly polished and mirror-like. At

present the mirror side is turned to the sun and reflects not only the sun light, thus making us visible on earth, but unfortunately the sun's heat as well. If I now turn the ship so that the black half absorbs the sun's rays, the heat comes in. On the other hand, it is hindered from radiating into space by the shiny coat which will be on the shady side. This will make it warm in here, but on earth people will vainly look for the *Geryon* and will rack their brains over the question of where we have gone. The trifling amount of light reflected by the rough black side will hardly suffice to penetrate the atmosphere of the earth. Anyway, we are already more than one hundred and fifty thousand kilometers distant."

"Well, it is a very bad situation!" grumbled Sam. "Couldn't we avoid disappointing them this way by increasing the artificial heating?"

"To reach an endurable room temperature, starting at two hundred and seventy degrees below zero, in a ship the size of ours, would require such an amount of heat that we could not possibly produce it with the artificial means at our disposal. We must give up the idea. There is nothing to do but hide for a while from the observers on earth."

"And how do you manage this turning?"

"Between the cabins and the tank rooms are three immense driving wheels. The axes of the driving wheels are at right angles to each other, as in a three-dimensional compass. If the wheel the axis of which coincides with the long axis of the ship is rotated clockwise, the ship turns counterclockwise, according to the law of action and reaction. In this manner the ship may be given any desired position in space by starting the proper driving wheel. Of course these wheels

have to rotate very fast. If the ship is to make a complete turn in a minute, the wheel must make a number of revolutions as much greater as its mass is smaller than that of the whole ship."

KORT had the gyroscope motor started. A dull humming commenced, which came to a higher pitch and finally sounded very shrill. Slowly, almost imperceptibly, the sun and the earth moved laterally around the ship. After a few minutes the revolution was completed. The shrill whistling became a hum, and soon there was silence.

As before, the sunlight came through the windows from below, diagonally, but from the opposite side. If a person had not been informed of the change, he would scarcely have noticed anything.

Thus it was that mankind became anxious and terrified and considered Kort's space ship lost.

From hour to hour the activity of the exhausts was lessened, and the movements of the passengers of the *Geryon* became more and more problematical. Walking on the floor had ceased; somersaults in the air were the regular procedure; any movement like a shove resulted in quick motion sideways or up in the air. It was possible to remain on the floor only by extremely careful creeping and holding on to the hand-holds which were provided everywhere.

On the second day of the trip, weight had sunk to a thousandth part; accordingly the weight of a person was only about seventy grams. Sam was just sitting in the smoking room, when Bergen floated in and joyfully invited him to take part in the first flight from the ship—a flight in the truest sense of the word. He felt a bit uncomfortable at the idea of leaving

SFQ

the protective covering of the ship and trusting himself to nothingness. But the enterprise had a great attraction for him, and his curiosity was greater than his anxiety. Besides, he had now become so used to weightlessness that unpleasant surprises in this respect were hardly to be feared.

In the central room the rubber suits were all prepared. Kort was already dressed, except that he still held his helmet in his hand and examined it carefully.

"The pressure is now so slight," he explained to his hesitating brother-in-law, "that we can stay with the ship out there with an acceleration of only a centimeter a second. That implies no danger."

THE SPACE PEDESTRIANS

THEN he gave a few more instructions and impressed on Sam and Bergen, who was also to take part in this first flight, the necessity of returning to the ship at once, as soon as they felt the slightest difficulty in breathing. He explained the use of the telephone wire, which was coiled up and hung on the breast of the suit. One end of the wire ran to the inside of the helmet and was attached to a microphone there. The other end was to be connected with one of the numerous plugs which were placed all over the outside of the ship.

"Do not forget," were Kort's final words, "to plug in the wire first of all. Then we can speak to one another or communicate with the men on board, and in case of need we can pull ourselves back to the ship by means of wires. Let's go!"

When Kort had convinced himself that the helmets fitted properly, he opened the inner door of the exit chamber and had Sam and Bergen enter. Then he carefully closed the door and turned an air valve, through

which the air escaped with a whistling sound. The rubber suits puffed out, so that the little chamber had scarcely room enough for the three expansive figures. A turn of Kort's hand, the outer door opened, and the three men slipped out into outer space.

Sam cautiously crept along the smooth steel wall and looked for a plug. He had scarcely made the connection, when he heard Kort's voice. It seemed to come from a great distance, though all three of the companions were within reach of one another.

"Uncle Sam," said the voice, "do understand me? How is your breathing?"

"Perfect! How about Bergen?"

"Bergen is all right," the latter announced. Thus communication was established.

The three figures clasped hands and commenced their wandering around the ship, while the wires easily ran out from the coils. If they had not already been accustomed to weightlessness, the first heedless step would have carried them far from the ship. It was only with difficulty that they succeeded in remaining within reach of the ship.

"What is that?" cried Sam in amazement. "What has happened to our space ship?" In terror he pointed in the direction of the exhaust. The slight motion had been enough to disturb the equilibrium. He gently floated away from the ship and slowly hovered off into space.

"What is the matter?" asked Kort, who also could no longer hold on and was floating off with Bergen.

"Well, see how our proud Geryon looks now!" continued Sam. In his eagerness he did not notice that he was moving away. "It is as short as a burned out cigar stub, and two of the wings are gone!"

Bergen snickered. It sounded in the telephone like a cough. Kort also laughed.

"A burned up cigar stub? A splendid guess, Uncle Sam! The cigar actually did burn up during the ascent. That is to say, we cast off the two burned out auxiliary rockets."

In a moment the wire had run out to its full length, stretched taut, and held the three men like captive balloons at a distance of thirty meters. The sunlit helmets and suits gleamed in the absolute darkness with an unearthly phosphorescence. Day and night had joined in a seemingly impossible union.

THE ship looked like a gigantic winged egg, a strange gleaming monster, in its course through space. At the blunt end a brightly shining white trail of mist was coming out.

"How do we get back?" asked Sam, after he had satisfied himself as to the shortening of the *Geryon*.

"In the pocket of your pneumatic suit you will find a small repeating pistol," was the reply. "Shoot it, and the recoil will put you in motion. You could also pull yourself back by means of the wire."

Sam followed this advice, and in a short time he was back at the ship. Reassured by the success of the "steering shot", he began to circle about the *Geryon*. He had a feeling of boundless freedom and delight. He would have enjoyed shouting aloud, in spite of his fifty-odd years. It was splendid to see his covered limbs glitter in the sunlight against the deep black background of the starry sky.

His ideas of up and down were passing away. Only a slight pull in the direction of the exhaust reminded him that there was still a down. Still, but not for long! In a few hours they would reach the limit of gravity. Then

the motors would be silent, and even this last reminder of terrestrial conditions would vanish.

"Uncle Sam!" sounded Kort's voice suddenly. "Look out for the exhausts! The wire does not reach to the stern of the ship, but it might break. You might burn your suit in the currents of gas, which would most seriously imperil your life!"

"I shall look out!" answered Sam, turning around. He started slightly at not seeing Kort. He had not thought of the fact that he had telephoned.

Returning into the ship went in the same manner as leaving it. When they had got into the chamber, Kort let air come into it from the ship by means of a valve in the inner door, until the pressure was normal. Then it was easy to open the inner door. After that the flyers could take off their suits and exchange experiences and observations without using the telephone.

"Wonderful!" said Sam. "It wasn't even cold out there!"

"The layer of air in the expanded suit is a good protection against the loss of heat," agreed Kort, "and if the suits hold the air long enough, there is not the least danger. Did you notice at all that our ship is travelling eighty kilometers every minute?"

"No!" answered Finkle, surprised. "I never had the idea that we were travelling at all and not at some ether health resort up in space."

"It is just another case of the old story of the caterpillar and the electric fan. So far as we are concerned, the *Geryon* is standing still, while the earth moves away and the moon comes nearer. This only hold good so long as the motion of the ship remains even and is not too much accelerated mechanically. You might just as well not think of it."

IN separate groups the crew was now taken out and shown the simple tricks and manoeuvres. Likewise Suchinow, who was no longer confined, was given a suit. It was not long before all on board the ship were accustomed to spend most of their time out in space, and whoever was not prevented by his duties climbed around on the wings or sped around in outer space like birds in the air.

Now Kort set about to make the promised giant telescope. A shaded concave mirror a meter tall was fastened by long metal bands several hundred meters from the ship. The reflections of the mirror were caught by an eyepiece in the window of the control room, and the telescope was completed. By means of a cord the mirror could be moved in all directions from the eyepiece and could be directed at any desired points.

It was an indescribable pleasure to examine the earth with this simple telescope and to view the cities enlarged many thousand times. It was even possible to make out the chief buildings. Only the rotation of the earth carried the focussed points beyond the field of vision so rapidly that it took much practice to be able to follow the motion of the objects by means of the primitive cord.

The last remnant of gravity vanished, when on the third day after the start the rocket motors were entirely shut off. The *Geryon* had reached that region in space where the almost imperceptible attraction of the earth is equalized by that of the moon, now rather near. It now obeyed only the laws of gravitation, like any ordinary celestial body, and fell with increasing speed toward the moon, the disk of which now far surpassed the earth in apparent size.

There was absolutely no more of up and down.

Anything not fastened down in the ship floated freely in the cabins. The men swam in the air, paddling with their arms and legs, if there was no wall in reach, to which they could cling. The idea of going to bed was meaningless; it would actually have required a great exertion to remain in bed. They slept, floating in the middle of the room. Sam floated about, smoking his pipe. The parrot floated in its cage with folded wings.

Drinking became a test of skill. To empty a bottle there was only the possibility of sucking out the liquid, like little children, or of sending out the contents by rapid turning of it. The liquid then floated in the room in the form of a sphere, which had to be caught in the mouth and sucked in.

Chairs and table were put aside and fastened down in a corner. The hammocks were rolled up, and the rope ladders were removed, since they could no longer be used. A person needed nothing for comfort but free empty space.

Only the limited operating time of the oxygen vaporizer in the diving helmet and the necessity of eating hindered permanent staying outside the ship. In this state of affairs it is not surprising that many did not even notice that the mighty moon, which in the meanwhile had become round, was rising higher and higher above the central line of the ship, until it hung laterally above the carrousel, stretching out in the sky in a threatening expanse.

CHAPTER XIX

THE ROCKET SIGHTED!

THE nearer the *Geryon* came to its goal, the more restless Suchinow became. The impenetrable mask which he always wore fell off, dis-

closing the careworn face of a nervous, tormented person. Incessantly he surveyed the surroundings of the moon and its masses of "land," which were spread out in the sky in the bright sunlight, constantly increasing in extent as they came nearer.

Waste lands and plateaus cut by wide gullies were alternated with sharp-edged craters and mountains with jagged cliffs, the dark shadows of which indicated enormous heights. No woods, no sea, and no river broke the monotony of the dreadful waste. From the north pole to the southern edge, as far as the sunlight reached, there was nothing but bare ground, looking dried up, and steep mountains. No lighter patches indicated snow or ice, and not the tiniest cloud prevented a complete view of the wrinkled and shrunken countenance of the airless old satellite.

For fourteen terrestrial days the sun shines uninterruptedly upon the bizarre mountains of the moon, blazing down on the land, and producing a temperature like that of boiling water. For fourteen days the dried up waste then sinks into night and incomprehensible cold. It is no wonder that one would vainly search this inhospitable companion of the earth for animal life, to say nothing of beings like men.

In the northwestern part of the disk there opened up the ring-shaped mountain of Copernicus, enclosing with several concentric lines of mountains a wide volcanic crater, the floor of which showed still more dark openings. The bare crests of this mighty mountain chain towered more than four thousand meters above the surface of the moon, casting jagged shadows on the masses of debris close by.

A dark spot within the wide crater caught Suchinow's eye. Was he mis-

taken, or was the spot really moving? Now it had reached the edge of the crater and was creeping away across the mountain chain. Was it really not a dot on the moon but a body floating in space between the moon and the *Geryon*?

Suchinow could not see clearly. The excitement of many months was concentrated in this moment.

"The rocket is in sight!" was the cry of the outside observer through the telephone.

"The rocket is in sight!" repeated the man posted in the upper room, loudly, so that it rang through the ship.

Suchinow clenched his teeth. "Be calm!" he murmured. "It is necessary now!"

IN the telescope the long torpedo-shaped rocket, which had kept the world expectant for almost half a year, stood out sharply against the bright surface of the moon. Its course was toward the northwest, and in a short time the rocket would pass beyond the disk of the moon and would disappear behind it after describing a narrow loop.

Kort went up to Suchinow. "We are close to the goal, sir!" he said. "Would you like to take part in the operations?"

"I ask permission to do so!" replied the Russian with feverish eyes. "In what way do you intend to reach the rocket?"

"First the speed of the *Geryon* must be increased to that of your rocket. This is already being attended to. The ship is being attracted by the moon and diverted in its path. Now it is describing the curve of a narrow Kepler gravitational parabola, with the moon at the focus, and is coming constantly closer to it. At the same time

our speed is being constantly accelerated by the free fall.

"The distance of the rocket from the surface of the moon seems to be not quite eight hundred kilometers. Accordingly the distance from the centre of the moon may be assumed to be about two thousand five hundred kilometers. It is possible to let the *Geryon* gravitate around the moon in the same orbit?"

"Absolutely! But we have not as yet the necessary speed to catch up with the rocket. I regard it as surer to approach as close as possible to the moon, to attain the utmost possible speed."

"And then?"

"Then we shall pass close by the surface of the moon and draw away from it again, until we strike the path of the rocket behind the moon. But then we shall certainly have a higher speed than that of the rocket, which can be braked at the right moment by proper use of the exhausts. It will of course not be easy to approach the lit rocket in the great *Geryon*, but in any case it is better to have too much speed than too little."

"Wouldn't it be simpler," put in the Russian, "to stop the *Geryon* in front of the moon by means of countershots, in order to wait for the rocket right there?"

"That might be so. But in this case we should have to wait until the rocket completed its course about the moon. Besides that, it would require the expenditure of an almost unattainable amount of energy, first to stop the *Geryon* entirely, then to hold it motionless in spite of the attraction of the moon, and then again to accelerate it in the path of the rocket, which we unfortunately cannot influence. And without absolute equality of speeds coupling on the rocket is simply out of the question."

BACK TO GRAVITY

KORT gave orders to call all the men on board and to make the *Geryon* all ready to manoeuvre. He personally convinced himself that the rocket chambers, the gas chambers, and the gyroscopes were all ready, and then he returned to the carrousel. At this moment he was only the technician and commander to whom a dangerous and difficult problem had been given, the solution of which demanded all his thoughts. Thus he did not notice how Suchinow watched the manoeuvres, pale with excitement and in feverish tension.

"All right!" came through the speaking tube from the engine room.

"Take charge of the gyroscopes, Bergen! Keep the main exhaust directed straight at the centre of the moon!"

The driving wheels began to sing, the ship slowly turned on its short axis, and the moon apparently sank down until it spread out directly below the carrousel. The *Geryon* was now rushing through space, with one wing forward.

Kort kept his eye on the scales which showed the position of the compasses.

"At present our course indicates five degrees to the east of the moon. But see, the direction is gradually changing more and more toward the moon."

The moon came nearer with uncanny speed. Each individual mountain top could already be made out with the naked eye, and the yellowish landscape reached out of sight in all directions below the *Geryon*, looking like a waste of clay and stone. Since the vertical axis of the ship was pointed straight at the moon, while the course was obliquely inclined, the masses of the moon seemed not only to rise from the depths but also to

come up sideways. This produced the impression that the gigantic moon was rolling upon the *Geryon*. The nearer the ship came, the more strongly this rotary motion affected the observers, who had to look away at times, to avoid becoming dizzy at the sight of the approaching land.

The rocket could no longer be seen from the carrousel; it had already entered the shadow of the moon.

"If we are lucky," remarked Kort, without taking his eyes from the compass scales, "then we shall succeed in cutting the path of the rocket so that we shall catch up with it behind the moon.—Isn't that so?" He stopped speaking, cast a glance at the plan of the flight curves, and said to himself, "The prearranged course does not quite suit!"

The course ran close by the moon; it even brushed the solid ground.

"If the exhaust fails now, we shall plunge helplessly upon the moon!" he exclaimed. His hand grasped the gas lever.

THE ship gave a leap. With a crash chairs and tables overturned to the floor. There was a crash of broken dishes in the kitchen.

Dr. Finkle, startled out of his nap, rushed into the control room.

"For Heaven's sake, what is wrong?"

Kort did not answer. He was testing the course of the ship.

"It is all right!" said he, drawing a breath of relief. "We shall pass the moon one hundred kilometers away! Since we have no atmosphere to go through, there is nothing more to fear at present."

He called into the speaking tube: "Have the ship examined, Bergen, to see whether anything has happened."

Kort ran his hand through his hair. "We have won the first trick!" he re-

marked, while he slowly pushed the gas lever back to zero. "You got a good scare, Uncle Sam, didn't you?"

"Oh, not too much. But what happened? Why did everything fall to the floor all at once?"

"I had no time," replied the commander, "to give any warning to those on board. I hope nobody was seriously hurt."

"Probably there was some broken glass and a few black and blue places. How was it that weight all at once came back and took us out of all the clouds without any gradual transition?"

"'Clouds' is good!" said Kort, laughing. "You must mean the smoke clouds in which you are accustomed to bathe. Anyway, it is all over, and this impulse of weight was only a fraction of our normal weight on earth. We simply got unaccustomed to it out in space and lost the use of our organs of locomotion."

"Won't you finally . . ."

"Oh, yes!" put in Kort quickly. "Just see how close we are to the old moon! What is more natural than our getting to feel its influence?"

"But why so suddenly and intensely?"

"I let the auxiliary exhausts work for thirty seconds at half power, to correct our course. That is all. I seem to have made a slight error in my calculations beforehand."

"And now?"

"We are falling around the moon, close to it. Have your camera ready. You will be able to take home such landscapes as no traveller on earth has in his snapshot album."

Bergen's entrance interrupted the conversation. "Two men are in their cabins, taken with space sickness," he reported. "Otherwise everything is all right, except for a few broken glasses."

"Presumably they both stood on their heads at the moment of impulse," said Sam, going to see about the invalids.

Kort turned to Bergen. "Have everything tied on that is not riveted on, and warn the crew about more surprises. If possible, have everyone in the hammocks. It is very possible that we shall have to change course several times more."

Meanwhile the surface of the moon had turned further. It was awe-inspiring to see the mountains increase in size and roll by at an uncanny speed. New strips of land kept rising up and passing by at the side. Each chain of mountains seemed about to catch up with and overwhelm the one before. Only men completely free from dizziness could bear to keep watching the grandiose sight of the apparently moving masses.

Sam reappeared. "The sick men will be all right. As soon as their stomachs are empty, they can walk again. You must keep food out of reach! The men are eating too much and moving about too little."

A NARROW ESCAPE

SUCHINOW stood motionless at the window and stared down. The green dots on his pale face stood out unpleasantly.

"Soon we shall have below us regions of the moon never yet seen by the eye of man!" he said. Then, after a while, he added, "Except Skoryna!"

Sam was lying on his stomach in the hammock, as he always did when observing the "world below". "Gus," he called out anxiously, "how high are we above this nutmeg-grater down there?"

Kort smiled at this peculiar but rather apt comparison. "Just a thousand kilometers, Uncle Sam! We shall descend to about one hundred kilo-

meters and then go upward again. If the moon had an atmosphere, we might feel some heat during this speedy passage."

The rotation of the "nutmeg-grater" became slower and then became an even lateral advance. In the distance mountains appeared on the horizon, moved on, and disappeared in the other direction at the edge of the moon. It was a quickly changing panorama. Gradually the sunlight became weaker. Dense darkness had long been in the deep craters. Only the summits of the fountains now emerged brightly from the twilight. They were nearing the border-line between day and night.

"It is becoming evening down there!" said Kort. "For the region over which we are just flying, the long lunar day is drawing to a close."

He viewed the surface of the moon, then turned to the compasses, turned to the optical distance measure, and again observed the speeding landscapes. There was evident anxiety on his face.

"What is the matter?" asked Sam.

"It is remarkable! We have passed the point where we should be nearest the moon and we now should be rising!"

"Well?"

"The distance from the moon is again lessening. It is unexplainable! Let us wait a moment!"

Slowly, to be sure, but perceptibly they were again nearing the moon. The mountain peaks, rising from the twilight and gleaming in the sunlight, flew past more quickly, a sure sign that they had come nearer.

Anxiously and hastily Kort examined the instruments. "I can't understand!" he murmured, and his glances wandered undecided between the scales and the great mass of the moon.

In fact merely looking out already aroused the sensation of falling. In the direction of the flight immense dark mountains were towering up on the horizon. The *Geryon* was flying toward them, one wing ahead, in its mad course. The increasing darkness added to the dreadful sight.

Then Suchinow sprang up. "Can my suspicion . . ." He did not finish the sentence.

A leap like a tiger—a grasp of the hand—and the gas lever went up to its full extent.

Full gas to all the exhausts!

Kort seized his arm, too late!

A frightful shock hurls everything down. The acceleration indicator raced up the scale, going far, far beyond the red line.

Five streams of fire shoot into space, with tremendous violence! They cast the ship upward, the plaything of cosmic forces! The surface of the moon sinks down. Suchinow lies on the floor, like a crushed worm!

In this moment not a breast rises and falls—not a heart beats.

Kort has clung to the switchboard, clinging to it with a superhuman exertion. Lights dance before his eyes, and a glowing millstone presses down on him, crushing his bones.

BETWEEN moving blue veils he sees the gas lever. He seizes it with his teeth and pulls it back. Then he sinks down, while the pressure falls.

The tops of the mountains rush past below, almost within reach. The twofold danger is over.

Glassy eyes seem to ask what returning consciousness does not yet understand: What happened?

Within the ship there was a devastated look. The tremendous recoil had hurled everything to the floor and smashed such things as were not

in some way fastened. The frightful pressure had lasted only two seconds, but that had been long enough to crack chairs and flatten fruit tins.

Panting, Kort slowly picked himself up.

"That was very close to death!" he uttered painfully. "I thank you, sir, for your quick action. In a few seconds more our ship would have been smashed against the moon."

Suchinow looked about in confusion. Several minutes passed before he could speak. "Yet I should have been a murderer, if you had not taken a hand! Pardon my folly! I never dreamed that the *Geryon* could develop seventy meters a second acceleration."

"It was necessary! Only this risk could have saved us. Of course, if the fearful pressure had lasted even ten seconds, none of us would ever have seen the earth again!"

The half-stunned crew again recovered and at once set out to investigate the devastation in the ship. The hull of the ship itself had had no injury. It was built to stand the most extreme pressure. Likewise the apparatus and instruments, being placed on springs, had remained undamaged. The damage to the furniture could be repaired after a fashion.

"I confess," said Kort, turning again to the Russian, "I am not quite certain about the cause of this deviation!"

"The *Geryon* did not deviate from its course. I am convinced that this second approach toward the surface of the moon has a reason outside the ship."

"In the moon itself, then?"

"Yes! An idea which often used to take up my mind was the question why the moon does not rotate but always presents the same side to the earth. Now my suspicion has been

confirmed. The moon is not a sphere but an ellipsoid, flattened on the side toward the earth. It is a body somewhat like an egg, with the long axis always pointed toward the earth. The tips, accordingly, have never been directly recognized by any earthly astronomer. If you now assume that the *Geryon* first passed by the bright central belt in its course, afterward going by the shaded rear protuberance, which is unluckily also provided with very high mountains, then all the events of the last few minutes are absolutely explained."

"You may be right," said Kort thoughtfully. "Your hypothesis fits in all respects. This egg-shaped moon must necessarily always turn the heavier side, therefore that which is flattest toward the centre of attraction, the earth. Accordingly it appears circular to the observers on earth."

"I hope that we shall pass the side of the moon on the return trip at a corresponding distance; then we shall recognize its circumference and find my hypothesis directly confirmed," added Suchinow. Then he sank again into his usual silence.

CHAPTER XX

UNCERTAIN HOURS

IT had also become dark in the *Geryon*, and absolute night lay about the ship. The sun had vanished behind the moon. The earth, which (like the moon, under normal conditions) might have given some reflected light, was for the present hidden by the dark masses of the near-by satellite.

With increased speed the space ship sped through the shadow of the moon, away from its surface, which in the darkness could not be seen. The un-

wonted darkness, together with the after effects of the shock they had just undergone, made the occupants sleepy. And when the exhausts began to operate again weakly, to force the ship into the path of the rocket, the pressure also made itself very unpleasantly noticeable. Even though it did not reach the normal terrestrial gravity, the passengers of the *Geryon* had become unused to weight. Just as during the ascent, it seemed as though there were lead in all their limbs. A dull pressure in their heads enfeebled their thinking, and unconquerable weariness fell upon the crew.

Soon all were in a heavy sleep bordering on a stupor. Suchinow, Bergen, and Kort struggled with all their might against this exhaustion. In any case they had to avoid letting the *Geryon* pass uncontrolled by the orbit of the rocket, which would delay the rescue of Skoryna for days.

The ship had now been so turned that it raced through space with the exhaust-end first. Consequently the currents of gas exercised a braking effect. It was accordingly a question of changing the parabolic course of the ship to a circle by slow decreasing of the speed.

Bergen was just nodding, when Kort's words startled him: "The moon is seven hundred kilometers below us. The height above the land is increasing only very slowly. I hope that we can soon let it gravitate freely."

A FINE yellowish light was falling into the carrousel. The earth was rising behind the moon and spreading out its gigantic crescent, four times as large as the crescent of the moon which is reflected on clear nights in the waves of Lake Conway.

After a while Kort depressed the gas lever. The space ship was now

floating about eight hundred kilometers above the mountains of the moon and was increasing this distance only very gradually. Its course was considerably curved about the moon, indeed not yet circular; but a further lessening of speed would have decidedly increased the difficulty of catching up with the rocket.

"For finer corrections," remarked Kort to Suchinow, "we must wait until we see the rocket. For the moment there is nothing to do but let the *Ger-yon* gravitate freely in an ellipse which is not much different from the circular path of the rocket."

Since the ship was again completely given over to the free play of natural forces, the pressure sank and absolute weightlessness was restored. The awaking sleepers found themselves and their resting places floating again in their cabins.

Soon after that the first sunbeam came through the windows. Far below the edge of the moon was lighting up strongly, and the spectacle of the awaking earth was repeated on the moon. But the flares of a corona, which had encircled the rising crescent of the earth, were absent because of the lack of an atmosphere. There were now two brilliant crescents floating below the ship, the earth and the moon. For the moment the moon, being nearer, had the upperhand in its fantastic size.

The crew became quickly gay, now that the pressure had disappeared and weariness had gone, like the oppression of a bad dream.

"The sun seems to have gone crazy!" was Sam's criticism, as he was sitting at coffee with Kort and Bergen. More exactly, he was floating around the casino chasing the brown globes of liquid. "When we were first fortunate enough to see it, it was down below. When we were hurrying

to the moon, to scrape by it, it shone into the carrousel splendidly. Now it is squinting in at the side again, in a shamefaced manner. I should not have thought the centre of our system capable of such leaps. And the worst of all is that Mother Earth, whom I always considered a steady reliable lady of mature years, has become infected with these extravagances. Not to mention the moon, for this old chap is going his own way and is even bold enough to approach our earth!"

"You seem to be in a good humor, Uncle Sam!" remarked Kort. "It is not so very long since a certain person sneaked off to his cabin, very depressed!"

Sam grinned. "I cannot stand that accursed weight any more. I am all for the freedom and independence of space!"

"But how will it be when we return home and Dr. Finkle again weighs his hundred and thirty pounds and his fifty-six years begin to assert themselves once more?"

"Keep still, Gus! I beg of you! It worries me when I think of it. But there are a few days more before that."

"Do you think so, Uncle Sam? We now are on a course which would take us to the earth in twenty hours. We could also have more acceleration, once we pass the neutral zone and use the attraction of the earth."

This outlook seemed to afford Uncle Sam only a moderate degree of pleasure.

"When we have the rocket," he remarked, "there will be no great hurry about returning. Couldn't we take a little excursion to Mars?"

"Has the earth become too small for your taste for wandering? Yet how you hesitated to come on this trip!"

"That is explained by the inertia of matter, Gus. When I am sitting, I sit

tight and I am hard to get to rise. When I wander, I remain wandering until some compelling circumstance stops me. As a physicist and master of gravitation, you must perceive this!"

THE ROCKET CAPTURED!

SUCHINOW was sitting at the lookout, searching for the rocket. By using proper braking and directional shots, it had been possible to keep the *Geryon* about nine hundred kilometers from the surface of the moon and to force it into an elliptical path which for a long distance was the same as the orbit of the rocket. Since the *Geryon* had now a considerably higher speed than the rocket, the latter would certainly be overtaken, sooner or later.

Suchinow gazed eagerly in the direction of flight and soon saw, at the side of the moon, the bright point he had sought. It seemed to be coming nearer. He at once informed Kort.

"We have been fortunate," he cried in a voice hoarse with emotion. "The rocket is gravitating parallel with us a slight distance away."

A fleeting flush of pleasure was on Kort's face, as he now adjusted the telescope in the upper lookout and now plainly recognized the shape of the shining torpedo.

"Very well," said he, "the difference in our speeds is no longer very great and can be equalized. How long is your machine?"

"Eight and a half meters!"

"Eight and a half meters," repeated Kort, "with a visual angle of sixteen seconds! That corresponds to a distance of . . . of somewhat over a hundred kilometers," he went on, after a brief calculation. "That is still too far!"

Nearer and nearer came the rocket. They could already recognize the slim

cylindrical shape without using the telescope. Kort moved the gas lever. "We must put on the brakes a bit more, or else we shall shoot past it!"

Suchinow operated the measurer of distance, his hand trembling on the screw.

The distance of the torpedo lessened to just three kilometers. Then the drawing closer stopped. The courses were now exactly parallel, both the *Geryon* and the rocket gravitating freely about the moon in concentric orbits.

"We might of course come a bit closer," said Kort to Bergen, "but it would be dangerous. We cannot stop the rocket, and the great *Geryon* cannot manoeuvre quickly enough to be certain of avoiding a collision. Now get over there quickly, before the distance again increases."

A wave of excitement swept through the crew. The great moment had arrived, the moment which the world had awaited for months in anxious impatience.

Since the space ship, with exhausts cut off, was circling freely in space like any ordinary meteor, with no artificial influence to disturb the play of natural forces, the proximity of the moon was no hindrance to leaving the ship.

KINETIC energy and the attraction of the moon determined the motion of the *Geryon* and forced it into the curved gravitational path—the same forces as operated on the passengers and sought to move them in the same manner. As long as no artificial influence disturbed the dynamic equilibrium, no force drew the men who left the *Geryon* away from the ship, any more than the walking stick of a man falling from a high mountain has any inclination to leave its possessor during the fall. It re-

mains at an unchanged distance from him, as long as the free fall lasts.

The rocket and the *Geryon* seemed to lie still side by side, just like two express trains running side by side at full speed. A passenger on one express can shake hands out of the window with a passenger on the other. He can bridge the gap between the two trains with a board and pass from one train to the other. Nothing but the current of air, the road bed rushing away behind, and the noise of the rolling wheels would remind him that the whole system is in motion. Relatively to the rocket, the *Geryon* was motionless, and relatively to the *Geryon*, the passengers leaving it would float motionless in space.

Kort remained on board as commander, to be able to correct at once any deviations in course which might arise during the expedition.

"Who is to attend to the coupling-on of the rocket?" asked the Russian hastily.

"Bergen and two men. But if you would like to take part, there is nothing to prevent it. Only you must not lose any time in preparing."

Half a minute later the four men were already slipping through the chamber into space. Instead of telephone wires they had coils wound with long thin wire, the ends of which were fastened to the ship. Besides that, each was provided with a pistol and sufficient blank cartridges to keep their course to the torpedo by means of shots and in case of need to return quickly like little living rockets.

Scarcely had they reached the side of the *Geryon* which faced the torpedo, when Suchinow slowly bent his knees, touched the steel wall with his fingers, and eyed the course like a sprinter about to start. With all his might he sped off, with Bergen and the two sailors following immediately.

Quickly the four figures, puffed out like balloons and shining in the sunbeams, became smaller and smaller and finally shrunk to shiny floating dots in the black sky.

After five minutes Kort saw through the telescope how they braked their flight with a few countershots, reached the rocket, and fastened the wires. The first connection, a loose one, was established. One of the four, apparently Suchinow, was constantly circling about the tip of the torpedo, as though trying to view the interior through the windows.

"I wonder whether he is still alive!" murmured Sam, who was watching beside Kort and keeping his eye on him with a care that showed his paternal affection and also a certain anxiety.

"Why ask a question just now, which has already, God knows, cost me enough sleepless nights?" replied Kort in an effort to overcome his impatience. "In a short time we shall know the truth."

THE FIRST ROCKET OPENED

MEANWHILE the great cable-drum had been taken outside and screwed on to the ship. A sailor unwound the cable and fastened the end of the wires leading to the rocket. Drawn from the other end, it wriggled through space like a glittering snake. Breaking of the wires was not to be feared, since weightlessness prevented any resistance. The sailor at the drum only took care that the cable ran out easily and without kinks. Slowly the cable crawled over to the rocket and was there cast around the steel hull and tied fast. The flask of a light-signal, sent by a pocket mirror, showed the observers in the *Geryon* that the fish was caught. The cable was wound up, became taut, and floated the mass of the rocket along slowly.

It came into view, a narrow steel cylinder about three meters in diameter. In front it was pointed and provided with windows all around the end. In back it had four great fins which during the flight through the atmosphere had served as stabilizing surfaces.

Kort ordered Bergen to take charge of the controls and went out with Sam. There it lay, the mysterious body which had been shot into infinity months before—now captured and confined—conquered! It was only a dark wart on the immense hull of the *Geryon*.

But what of Skoryna?

No one said the question aloud. The windows of the rocket had become frosted on the inside and were no longer transparent. Nothing moved in the lifeless steel shell. Within arm's length with the poor tortured person—whether alive or dead—for who could tell? At present he was still out of reach in his dungeon.

Kort examined the circular door, which was just large enough to admit a person headfirst.

"The door is indeed fastened from within," said Suchinow, who immediately on returning had connected up with the telephone system of the *Geryon*. "Still it should be easy to break open. But how? If the air within escapes, he will at once be killed, since he has no pneumatic covering. If he still is . . ."

He did not complete the sentence. He again kept trying to look through the frosted windows.

"The simplest thing would be to take the whole rocket inside the *Geryon*," replied Kort, "but our entrance chamber is too small for that. There is nothing to do but fasten on an air container, to make the double doors necessary for entering. Be patient a little while longer!"

He immediately made the necessary arrangements. He had foreseen this difficulty and had taken along the proper equipment. An airtight metal pipe, just big enough to hold a man, having a pneumatic door at the end, was welded on to the rocket. This was done in such a way that the door of the rocket was inside the pipe. Then a mechanic crept in, carrying tools and an extra rubber suit. Behind him the outer door of the pipe was securely fastened. It was no easy task for the man, working in the narrow space, but weightlessness made it less difficult for him. Soon the inner door of the rocket lay open.

CHAPTER XXI

THE YOGI

SCARCELY was the body of Skoryna, unrecognizable in the rubber suit, safely within the ship, when the order sounded through the telephone, "Everybody on board!"

It was high time to start the exhausts, in order to retain and make use of the present favorable course to the earth and to avoid being carried around the moon again. A slight downward pull showed that technical means were again at work, carrying the ship away in opposition to the gravity of the moon, toward the earth, homeward.

Skoryna had been carried to Suchinow's cabin and given over to the doctor's care. Kort was for the time being so occupied with his navigation that he had no time to think of the person rescued. At the equilibrium point between the moon and the earth, which he hoped to reach in a few hours, he intended to continue the work on the rocket. It was to be welded fast to the surface of the *Geryon*, to prevent breaking loose in landing.

As for the rescued one, was he real-

ly saved or was he dead? Had help come too late?

Sam appeared in the control room, pale, trembling in all his limbs, depressed, as though he had some dreadful news to report. An anxious suspicion seized Kort. "Is he dead, Uncle Sam?" he asked hesitatingly.

"His heart still beats," replied the old doctor shyly, "but it is a wonder that he still lives. It is the strangest phenomenon which I ever saw in all my practice." He stopped speaking, as though seeking for words.

"He is still alive?" cried Kort and a burden fell from his heart. "God be thanked that we did not come too late!"

"I should not like to say so definitely as yet! He is in a dreadful condition."

"Speak up, Uncle Sam!" insisted Kort. "How is he? Is he—has he lost his reason?"

"A kindly fate has saved him from the worst thing, madness. No, it is not that!"

After a short pause, during which Kort's eyes never left his face, he went on: "Can you imagine a person lying unconscious for three months, without taking any nourishment, and still living? Living? Being alive now?"

Kort passed his hand over his forehead. "Did you say three months, Uncle Sam?"

"The ship's log proves it. The last entry is on November 21st, a few days after he sent the call for help to the earth. Then his strength, not merely physical strength but rather the strength of will and hope, seems to have left him. It was well for him to sink into unconsciousness, to think no more, hope no more, have nothing more to fear. It was well for him, and I hope it saved him. It spared him the

last result, despairing of help there in the frightful loneliness."

KORT seized the little notebook which contained Skoryna's hastily written daily notes—the log book which every ship's commander fills out with painful exactness, as long as he has the strength to hold a pencil in his fingers. If Skoryna had no longer fulfilled this important duty, there was no doubt that he had been unable to do so.

Sam prevented his reading the book at the moment. "Wait a little longer!" he said. "You can make an exact study of it later. First let me finish my report. Skoryna is reduced to skin and bones, the image of a corpse. Yet he breathes, weakly but perceptibly. His body is not in any way injured. Meat broth carefully given will perhaps bring him back again to life and consciousness. I also have a valuable ally in the absence of weight."

"Do your best, Uncle Sam. You must succeed in saving the life of this pioneer of spatial travel."

"Nothing shall be overlooked," murmured Sam anxiously, as though he still had something on his mind. To gain time, he then said, "Have you ever heard that a human body could endure that? Three months without food! In India there are actually said to be fanatical Buddhists who let themselves be buried alive, to rise again years later as famous yogis. I always thought that fabulous. I travelled long enough in Bombay and on the Ganges, but I never saw a yogi who did not prove, on closer view, to be a clever trickster. But haven't we found a real yogi in Skoryna? I have tested it with the most varied theories. The weightlessness of gravitating bodies, the extreme cold in the rocket, the incontestable fact that

with low temperatures albuminous cells have a prolonged life—perhaps all this can and even must have led to a preserving of the body. But these are only superficial hypotheses, and the exact investigation of this riddle shall be the task of my later years.”

“The main thing, to be sure, is that Skoryna is alive,” remarked Kort. “Why and how are for the moment minor details!”

“For the moment, yes! But this question will allow me as a doctor just as little rest as the problem of the space ship has for many years in your own case.”

“Can I see Skoryna?” asked Kort suddenly.

Sam appeared startled. In evident embarrassment he tried to evade the question. “Wait until Skoryna is stronger. You might be terrified at the deathly face, which hardly suggests a beating heart.”

Kort was struck by this almost unmotivated pretext. “I am not so easily terrified, Uncle Sam!” He did not hide his amazement. Finkle turned to another subject. His embarrassment was actually surprisingly evident.

“What do you think about Suchinow? Have you really considered why he sneaked into your ship and in this way compelled his participation in the rescue trip?”

“Why this discussion? It is natural enough for him to have the greatest possible interest in the salvage of his hapless machine.”

“Not merely the machine but rather the passenger!”

“Well? Isn’t that a human feeling?”

“I believe I see through the riddle. Suchinow is—Skoryna’s father.”

Kort looked up in surprise. “To be sure! But why has he kept so still about it? He had no reason to conceal

that he is the father of a clever and admirably bold young man.”

“Well, so far as I know, Suchinow has no son.”

An angry flush mounted to Kort’s face. “What do you mean by this confused introduction?” he cried to his brother-in-law, who, it was evident, was keeping something back.

Sam bent his head and wiped the sweat from his brow.

“One more question, Gus! What do you think about Nataalka?”

Kort straightened up and his eyes flashed threateningly. “You know more than you say! My word binds my lips. I have, for the sake of Skoryna, promised to keep silent about Nataalka. But you truly make it hard for me to keep my promise. Speak or be silent! One of the two! But stop giving these confused hints!”

“Gus, you gave me your word, and you have kept it. You have never since then spoken about Nataalka. But did you also promise never to speak with Nataalka?”

“What do you mean?” cried Kort, staring at Sam as though at a ghost.

“You will, I hope, soon be able to speak with Nataalka. She is in the cabin of Suchinow, her father.”

Kort fell back as though thunder-struck. “I guessed,” he groaned, after an anxious pause, “that Nataalka was connected with Suchinow. But it never came to my mind that it was she for whom I was making my rescue expedition.”

“I have been sure of it only for half an hour!” replied Sam timidly.

“Go! Go! Leave me alone!” exclaimed Kort roughly. Finkle withdrew, his mission finished.

SKORYNA’S DIARY

FOR a long time Kort sat motionless, his head in his hands and his arms resting on his knees. The scales

fell from his eyes; the foundations of the world seemed to totter. All was now clear. She had come to him as a spy, to listen to his ideas, to copy his invention, to steal his intellectual possession in a common tricky way! And this woman had been dear to him; he had loved this woman with all his heart and had trusted this sneaking traitress unsuspectingly with his secret. A sob escaped him.

Probably—no, certainly—she herself had set fire to his laboratory, to conceal the traces of her theft. And the attempted rescue, the burned hair and clothes, had been a mere comedy, the trick of an actress, to lull the man to sleep! And then she went to Boland. Yes, it all agreed wonderfully! This Martin with the drugstore was put forward to keep him from following her; the supply of letters had been written to keep him quiet!

And what of himself? He had believed everything, taking everything for genuine, until Sam at Mother Barbara's had instilled the first doubt. A dreadful anger seized him, anger at the woman whom he had loved. He felt anger at Sam, who had knowledge of this network of deceit and had hidden the truth from him until this hour; anger at himself, for letting himself be fooled; anger even at his ship, which had been built with the money of this scoundrel on whose errand Natalia had deceived him. And Suchinow?

This green-spotted scamp had even been so bold as to sneak aboard the *Geryon*, to use this construction also at the earliest opportunity and to pass it off as his own work.

A hoarse laugh came from his throat, sounding as shrill as the note of a cracked bell.

"You shall yet find out what I am, the whole crowd of you!" muttered Kort between his teeth.

He hoarsely called for Bergen and gave him the charge of the ship until further notice. Then he locked himself up in his cabin.

The examination of Skoryna's log book distracted his gloomy thoughts. His eye at first passed mechanically over the firmly written lines, which he still had in mind from the letters. Then technical interest awoke in him, and with increasing attention he went over the clear account of the mad flight. The cosmic and technical phenomena were judged with admirable accuracy, and the appended tables giving the readings of the measuring devices provided valuable scientific material.

The notes began on the eighth of September, the day after the start.

.... "I do not know what is the matter with me. My forehead is all sweat, and my hair sticks to my face. Where am I?" ...

"... "I must have been unconscious. I lost my senses in the frightful heat." ...

Kort found his suspicion confirmed. During the rapid ascent through the atmosphere the rocket had been overheated. If in the *Geryon*, starting relatively slowly and provided with good cooling apparatus, the heat of friction had been oppressive, how must it have seemed in the tiny rocket as it sped along! There was also an explanation of the failure of the lighting system:

.... "At last I have found the disturbance in the electrical system. The lead plates of the storage batteries bent because of the high temperature during the ascent, causing a short-circuit."

THEN followed descriptions of the earth rising in the sunlight, observations regarding the diminishing gravity, and determinations of posi-

tion by taking the height of the stars.

.... "I can no longer be mistaken in seeing that the speed calculated has not been attained. Perhaps the machine would have had a higher degree of efficiency by using several exhausts instead of one."

Kort felt confused. Had Suchinow then failed to use this simple and decidedly best construction of the powder-rocket? In excitement he read further.

.... "I cannot pass the limit of the earth's gravity without using considerably more acceleration shots than were calculated. Can I venture to use up the reserves to such an extent?"

.... "The thermometers indicate eight degrees below zero; at this temperature there seems to be an equilibrium between the access of heat from the sun and the radiation into space."

.... "I have now circled about the moon just eight hundred kilometers from the surface. My course is a closed ellipse. Without using tremendous amounts of energy I cannot reach the limit of gravity. What shall I do now?"

.... "For the third time I am going around the moon. My father was right; the moon is not a sphere but a pear-shaped body. —The solitude is intolerable, and the absolute silence rings in my ears like the roar of the Danube. —I cannot make up my mind to return to the earth; the remnant of energy cartridges would not be enough to hinder the free fall, and death would be certain."

What dreadful torments Skoryna must have undergone! The only alternatives were to seek a quick death by plunging through space to the earth or gradually to fall a victim to madness, there in solitude!

.... "Has anyone on earth seen my

light-signals? Great Heavens, what if no one is able to bring me aid! Who is there to rescue me? My father? In a second rocket he will meet the same fate that has come to me. The amount of fuel which may be carried is slight. The only person for whom I hope is Kort. But how long will it be before he constructs his new invention? If I were certain that Kort is coming, if only a single word could reach me from the earth, then it would be easy to wait. But doubt, this fearful doubt of the possibility of my rescue from my prison is crushing me!"

The following notes became more and more scanty, and the illegible handwriting suggested a weakening of strength.

.... Shall I not rather bring about the sure end? Better a horrible end than an endless horror! Is my mind becoming a blank page?"

.... "I am getting tired. I talk with myself, to hear a human voice, and then the sound of my voice terrifies me."

.... "God in Heaven—if there is a God—protect me from madness!"

An absolutely illegible scrawl followed as the last entry. Doubtless the pencil had then slipped from the limp fingers.

Kort was utterly confused, as he laid the log book aside. The most contradictory feelings were surging within him. This woman had been terribly tried. The most refined torturer of the middle ages could not have devised these torments which Nataika had had to endure, in absolute solitude in empty space.

He could not refuse her his pity and his respect. Still, she had betrayed him and lied to him. She had abused his confidence and trampled his heart under foot! In his mind there yawned a deep gulf, which seemed to him not

to be bridged and which pained him infinitely.

Sam knocked. "Gus!" he cried, when he found the door locked.

"I wish to be alone!" said Kort harshly.

"Natalka has awakened. Won't you see her? She is asking for you."

For a while there was silence in the cabin. Kort was passing through a terrible combat with himself. This struggle lasted for whole minutes. Then the door opened.

"All right, I'll come!" he cried hoarsely.

Then he silently followed his brother-in-law to the bedside of this woman, whom he loved with the constancy of a man of thirty, whom he hated with the anger of an honorable man who has been shamefully cheated, and whom he admired as a martyr.

CHAPTER XXII

NATALKA

IN the corridor Suchinow sneaked past. Kort looked through the man as though through glass.

Natalka was alone in the cabin when Kort and Finkle entered. Pale as a ghost, she was floating upon the bed, just held fast a little by the slight weight. She scarcely breathed, and her eyes were closed. Her glistening short black hair contrasted strangely with the sunken white face. Now and again a faint flush, coming and going like a shadow, colored her cheeks and testified that life had returned.

Minutes passed. Without moving, Kort gazed at the sharp features in which he could only with difficulty recognize the sweet face of his assistant. How this poor creature must have suffered! Pity overcame his anger.

Then Natalka opened her eyes. The long silken lashes cast narrow shadows on the lower lids. The pale face seemed suddenly changed. The great brown eyes looked around the room searchingly and then rested on Kort. A tender smile beautified her mouth, which had been pinched in as though in pain, and her lips opened.

"Kort!" she murmured. "He has come!"

The sound of these few words, the liberated happy smile, and the deep sigh of a breast taking a breath of relief touched Kort to the heart. How Natalka must have longed for him, who alone could bring her help! But again a bitter thought came to his mind and hardened his heart. Yes, she had indeed longed for him, the technician, the rescuer! But what of Kort the man, whom she had mistreated?

"You are saved, Miss West!" he said coldly. He himself felt the flatness of his words.

"By you! How I thank you!"

This sounded so tender and true that Sam could not understand how Kort was able to reply coldly:

"Whether it was I or some one else, is indifferent to you. I only did my duty as a man!"

"I know," whispered Natalka, "you did not suspect who Skoryna was. Allow Natalka to thank you for saving Skoryna."

"I am speaking with Skoryna and I accept his thanks."

"That means then that—that you reject Natalka's thanks?"

The brown eyes were anxiously fixed on Kort, as though awaiting a judgment. Kort looked down and did not reply.

With a groan the invalid fell back, while Sam bent over her, greatly worried. Then he whispered to his brother-in-law: "Any excitement is bad

for her! Don't you see how you are torturing her?"

Kort gave the speaker an icy look. He was thinking of the day when Nataalka visited him with Martin—the day when he had felt the most terrible disappointment in all his life! Had Nataalka asked then whether she was not perhaps torturing him?

"Then you cannot forgive me?" continued Nataalka, and her question sounded like a plea. But Kort remained silent.

After a while Nataalka straightened up. She seemed stronger, as she said in a clear voice:

"It is true. I am asking too much of you. But no criminal is judged without having a chance to justify himself. Will you hear me?"

When Kort nodded agreement, Nataalka whispered with trembling lips, "August Kort, of what do you accuse me?"

Kort looked up in surprise. "Do you ask me that?" he answered in amazement, and yet it seemed to him that it would be hard to formulate an accusation.

"Yes, I ask you that, and you must answer!"

A STRANGE uncertainty came over Kort. What was he to say? What did he really know? What had this woman done to him? The energy cartridge! Did he really have any proofs? And if so, had not Nataalka just demonstrated at the hazard of her young life that this invention was worthless? After his victory by means of the detonating gas propulsion, what did he care about an invention that could no longer mean anything to anyone? It would now be ridiculous to make this affair the subject of an accusation. But what then? His thoughts were confused. His violent reproaches, which had been clear

to him a few minutes before, had crumbled to dust at the simple question: "Of what do you accuse me?"

"You do not answer?" said the tired voice of the invalid. "Very well! Then I shall tell you your grievance against me." She remained silent a short time, to collect her strength for what she had to say.

"Did I not find out and steal your ideas? Is not the cartridge which operates my father's rocket your invention? Is it not your intellectual property?"

Kort made a gesture of indifference. "It is not worth mentioning. The powder rocket is played out."

"A sad end, indeed, for the shot into infinity! But what remains of my crime, if you cast aside with a wave of the hand my theft of your invention?"

Confused and embarrassed, Kort stood before the invalid. He had come as a judge, and now he was put to the question like a schoolboy who had not learned his lesson. What remained of his accusation?

Was he to cry out his pain at having his love disappointed? That would simply make him ridiculous!

Nataalka smiled a little. "Listen, August Kort, I will confess to you. You shall learn everything."

LIGHT FROM NATALKA

OLD Sam had taken good notice of the change which was taking place in Kort. In excitement he waited further developments. Although he as a physician was insistent on keeping the patient from all harmful emotions, he said to himself that speaking things out clearly was far preferable to gnawing uncertainty.

In short sentences, broken by pauses of exhaustion, Nataalka commenced:

"I do not conceal from you that I came to you on behalf of my father—to find out from you what we had long lacked to conclude our work of years—the necessary energy contain-

er of sufficient capacity to operate the rocket. I found more than I had dared hope. Your ideas intoxicated me. I recognized in you a genius far superior to my father's intellect. My most daring dream seemed near fulfillment by your invention. I forgot my father's pressing errand, I worked with you and for you on the complete solution of the problem to which my father had devoted his life and which was also the aim of my existence. I wished nothing further than the quickest possible completion of your—our—work, the building of a space ship, to conquer the universe—with you—through you!"

Kort saw the structure of his doubts tottering. He listened intently to the soft but clear words of Nataalka. After a pause she went on:

"I should not have been a woman, if I had not felt that you saw something more in me than just a helper. And the hot blood of Hungary would not have flowed in my veins, if I had let this discovery pass without any impression on me!"

"Nataalka!" cried Kort, trembling with emotion. But the invalid continued undisturbed.

"But ambition and eagerness for accomplishment overcame all other feelings in me. That is a spiritual inheritance from my poor restless father! You hesitated to use your work. You refused foreign capital, and you could not secure the necessary funds. Impatiently I longed for the building of a model which could be put to practical use. You seemed satisfied with the scientific solution. But I longed for the deed—the great liberating deed, to mark an epoch in universal history!

"And when I then saw that in your thoroughness you were making no more progress and that no impulse, whether right or wrong, would set you in motion, to put the results of your genius before the world, I felt a boundless disappointment. You needed to steal, August Kort! To effect

your end, stealing or any means at all should have been right to you, in order to bring to pass the wonderwork of the ages. It was a crime against mankind that national honor and trifling pride as a citizen meant more to you than this noble work. Nations rise and fall, ideas and opinions change in the course of time, but in the beginning comes the deed! It outlasts time, it creates epochs, it is the centre about which peoples and ideas are grouped.

"My father's letters reached me in this frame of mind. I had written him that you had solved the problem, and this brief message had caused him to act. He had found a financier, the Roumanian Romano Vacarescu. The construction of the Suchinow rocket had started. Then I made comparisons between him and you. There was my father, the man of iron energy, inspired with boundless ambition and an immeasurable will but with limited intellectual gifts! And there was yourself, the scientist, the genius! You had the means and did not know how to use them to the utmost end. In such moments I hated you! My father would have hesitated at no crime, if it had been necessary to realize his ideal. I, his daughter, have been a thief, to advance the cause which I served. I cared nothing for my father's personal glory and still less for yours! My life was dedicated to this work, and I think I have proved that this is not mere words.

"I have sacrificed more than my honor as a citizen—I gave up happiness for the great work."

Kort was amazed to hear the revelations of a great soul, which he to be sure did not understand in all respects. Yet he began to have a feeling that in morality also there is perhaps a limit of gravity, at which the idea of up and down loses its meaning.

"After the unlucky burning of your laboratory I doubted whether your machine would ever be built. According to bourgeois ideas it was wrong

for me to leave you at the time which was most difficult for you and your work. But what is right—what is wrong? They are ideas set up by human beings, who come and go! I saw you work, seek, weigh, and investigate—and the time set my soul on fire.

"I had collected your ideas, and in Boland, at the home of my married sister, I carried them out painfully. My exhausts were differently constructed than yours—but that did not at all change my theft of your basic ideas and your powder-mixture in the energy cartridges. I placed my plans before my father and described them as stolen from you. I was forced to this half lie, since my father would have mistrusted my own constructions. Rightly, too, as the fate of our rocket has proved!

"Believe me, my acts were never directed against you, the man Kort. Under any circumstances—by means which you know—I had to keep you from seeking after me, which might have been dangerous to my father and consequently to the work."

For a time Nataalka remained silent in exhaustion. Then she continued in a voice full of emotion:

"The goal is now reached. The space ship is speeding through the ether, and I am happy that it is after all Kort's work which has won the victory. And if my call for help from the moon helped to speed up your construction, then I gladly take upon myself the judgment of the world, and I am proud of my deed!"

KORT had long since lost his proud bearing. With lowered eyes he had listened to Nataalka's confession. Her words rang in his ears, and he bent his head in shame—in shame because of the revealing of a soul which was stronger than his own.

"And if you really have done wrong," he cried, when she was silent, "those frightful weeks up there in horrible loneliness would outweigh a murder!"

There was a faint sorrowful smile on Nataalka's lips.

"They mean nothing," she said softly, "compared with the anguish of my heart when I introduced my brother-in-law Martin to you as—as my husband. That was my hardest sacrifice."

"Nataalka!" stammered Kort, his heart almost too full for words, and he covered the hand of his loved one with kisses.

Old Sam felt that he was one too many, and he quietly withdrew. He was no longer worried about his patient, since joy is the doctor's best aid.

"The good fellow has a lot to learn yet!" he murmured to himself. "He is always flighty, one way or another!"

Then he looked for Suchinow, to tell him that his daughter was out of danger and to feel his pulse.

CHAPTER XXIII

FLIGHT

THE *Geryon* had again reached the neutral gravity zone between the earth and the moon. The moon was becoming smaller and smaller, until it was again a yellowish disk floating in the black sky, while the earth increased in size proportionately. Since the space ship during its manoeuvres around the moon had been carried along a bit in the moon's orbit, it was now approaching the earth on the return trip more on the side toward the sun, and the crescent of the earth seemed fuller. More than half of its disk was already shining in the sunlight.

Bergen, who had taken charge of the ship for the time being, was just considering whether it would be right to shut off the exhausts altogether at the limit of gravity and submit the *Geryon* to the attraction of the earth, or whether it would not be more sensible to get Kort's opinion first. Just then Sam came up to him.

"Why so grim a face, my dear Bergen? We are homeward bound!"

"Grim, doctor?" said Bergen with a laugh. "Not that I knew of! I was just reflecting whether I had better disturb Mr. Kort. I should like some directions as to what to do."

Sam touched Bergen's arm. "Not now! Leave him alone, and act on your own judgment! I shall be responsible."

"Is it true, doctor," remarked Bergen confidentially, "that Monsieur Valé is not a French reporter?"

"What do you mean?"

"I think he is the Russian rocket inventor, Suchinow."

"How do you know?"

"Well, I was thinking about his peculiar behavior. For a newspaper man he had a bit too much technical knowledge and interest in the doings of the ship. And then there was the way he talked about the rocket, which he knew perfectly well inside and out before we had even attached the cable to it. Then I said to myself that there was something queer about it. And the cook told that he had read in some Linden newspaper, before we started, that the constructor of the famous rocket had been badly gassed during the war and in consequence had remarkable green spots on his face. So it was not hard to assume that . . ."

"It certainly fits together, my dear Bergen, and he actually is Suchinow. Anxiety about his rocket brought him on board our ship. And do you know who Skoryna is?"

"The conductor of the rocket?"

"Not a conductor but a conductress! Skoryna is not a man but a girl, the daughter of Suchinow!"

"Good Heavens! All honor to her!" cried Bergen. "What a girl! Really a girl like that might please even me, certainly far better than the ladies of Freetown, so crazy to be married, who just knit beautiful stockings, drink coffee, and wait for some one to come along and take them away! Bah!"

"Yes, we must take off our hats to her. Isn't that so, Bergen?" Sam grinned to himself, well satisfied. It was important that Nataalka should not be misjudged. "Do you remember

the assistant who used to work with Kort?" he went on.

"Of course," said Bergen, "she was a Miss West, if I remember rightly. She had a clever head, this assistant, much better than many an engineer in the airport. I believe that Kort was very sorry when she went away!"

"Now listen! Skoryna is none other than this Miss West!"

Bergen's mouth was wide open in amazement. "What! The assistant went to work on her own account and . . ."

Sam put in with a laugh, "And this girl took in some of Kort's ideas and imitated him all of a sudden. What do you say now?"

As well as might be in the balance of weight, Bergen slapped his thigh and cried:

"She is even better than Kort! Now I am not surprised that Kort was a bit fond of his assistant. They are worthy of each other!"

"That is what I think!" agreed Sam, well pleased. He was satisfied. Respect for Nataalka's accomplishment seemed to prevent any distorted views. Of course he had to admit to himself that the opinion of Bergen, an enthusiastic sailor of air and space, did not determine how the world at large would judge Nataalka's acts.

"But what I wanted to ask, Bergen, was whether you had seen Suchinow?"

"A quarter of an hour ago he got a rubber suit and went out to his rocket! He probably has various things to tinker with on it."

Since Sam had nothing better to do, he determined to leave the ship also for a little trip. He circled around to *Geryon* close to it and looked in at the windows. There he saw Nataalka, smiling happily, hand in hand with Kort, who was eagerly speaking to her.

"I beg a thousand pardons!" said Sam, snickering to himself. "I will not intrude!" He turned quickly away and soon reached the bow of the ship.

"Well, what is the matter there?"

he cried in astonishment, when he saw the rocket floating some distance away, unattached—freed from the ropes that held it. Suchinow was just creeping into his machine through the air container which had been attached.

"Stop! Where are you going?" cried Sam. In his eagerness he did not notice that no one could have heard his words. Persuaded by the absolute weightlessness, he had not put on a telephone wire and was therefore not connected with the ship's telephone.

Suchinow did not pay any attention to Sam but vanished into the rocket.

"What are you doing with the rocket?" he cried again, of course without any effect. With a mighty leap, he sped from the ship toward the rocket. It was too late. A dense white cloud was suddenly formed in space, and the speeding torpedo was already vanishing in the distance.

Suchinow had fled.

The airless space, absolutely impervious to any sound, had made it possible for the rocket to leave at full power without anybody being able to hear the explosions.

Sam was in the dense cloud of fine ice crystals, formed by the discharges of the rocket. A white impenetrable mist surrounded him. The rocket had disappeared, and there was also nothing to be seen of the *Geryon*. Fine needles of ice clung to the leather covering of his pneumatic suit, besides sticking to the quartz lenses of the helmet. He had completely lost his sense of direction. In whatever way he looked, he could see nothing but the grey mist.

LOST IN SPACE

"I CERTAINLY miscalculated today!" he said to himself, by way of reproof. He tried with a couple of pistol shots to escape from the mist, which no current of air was scattering. Unluckily, he had taken the wrong direction, and when he had emerged from the clouds, he saw to

his terror that the *Geryon* was floating in the far distance and was going farther and farther away. His own speed was constantly carrying Sam off in the direction he had taken.

He again pulled out the pistol and fired some braking shots. His quick motion, which had been commenced by the violent leap from the ship and increased by the first two directional shots, became slower and finally entirely stopped. But there was a long distance to travel back to the *Geryon*, glistening there in the distance, and the cartridge chamber of the pistol was empty.

In excitement he examined the pockets of his rubber suit for ammunition. In vain! There was not a single cartridge to be found. What should he do now?

He drew up his legs and sent them back quickly, as powerfully as he could, hoping that by such swimming motions he could commence to move along. But even if this would have had effect in the interior of the air-filled ship, in empty space his efforts had to remain ineffectual. However hard he tried, the distance to the *Geryon* remained the same.

Tired and despairing, he ceased his fruitless exertions. A cold sweat ran down his back. He swore up and down that on future flights he would be fastened triply and would put on an armor of well-filled cartridge belts. All this, meanwhile, did not alter the fact that the ship's doctor of the *Geryon* was going his way alone in space as an independent celestial body.

Then a gleaming dot came away from the ship. Sam drew a breath of relief. "God be thanked! My misadventure has been observed!"

The dot increased in size and soon the inflated balloon-like figure of a member of the crew floated up to him. It took him by the arm and set the weary man in motion again by the recoil of a couple of pistol shots. It was Bergen.

A few minutes later the two landed again on the *Geryon* and slipped

through the chamber into the interior.

"Well, doctor!" said his savior with a laugh, when the suits had been taken off. "You want to be independent! Or are you also thinking of fleeing?"

"Has the Russian really gone?" replied Sam in excitement.

"For ever! The orderly just brought me this note, that was fastened to the lamp."

Sam hurriedly seized the paper. It was not sealed, and he therefore thought it proper to read the message, though it was directed to Kort.

"Receipt?" he muttered. "What can Suchinow give us a receipt for?" Then he read on:

"As representative and manager of the Transcosmos Stock Company, of Bucharest, having full authority, I hereby declare that I have received back from August Kort, of Freetown, the rocket R S I in perfect condition. In the name of the company I express to Mr. Kort my thanks and best wishes for this successful rescue expedition.

"Space ship *Geryon*, February 7.
Suchinow."

"A comical chap, isn't he?" said Bergen, as Sam put the letter back in the envelope. "That man has the devil after him. He cannot bear to return to earth towed by us. He prefers..."

He left the sentence unfinished and went to Nataka's cabin.

"I must see about my patient a bit!" he said, when Kort opened the door to his hesitant knocks. "I must see that she is not excited and mistreated."

HE was amazed at the brilliance of her eyes and the fresh color that shone on the thin cheeks of the invalid.

"I feel very well, doctor!" said Nataka. "I am going to be so happy on earth, with meadows and woods and animals and flowers. The flowers especially!"

"By the day after tomorrow, dearest," said Kort happily, "we shall be rocking on the waves of Lake Conway.

That is to say, if it is not frozen. In our northern hemisphere it is now winter."

"Oh, then we shall go through the snowy pine woods, which glisten in the sun and cast blue shadows on the snow. We shall throw snowballs like children and coast down the valley. And in the evening we shall sit by the crackling stove and breathe the fragrance of roasting chestnuts and watch the apples smoke on the fire. And we shall hold hands. Can you understand, Kort, how infinitely beautiful all the little trifles of the earth seem—after the long weeks and months in space?"

"And the shot into infinity?" said Kort, jestingly.

"It has died away. My task is fulfilled. At last I may and will live!"

Sam thought it time to let the exhausted invalid sleep, and he pushed out his resisting brother-in-law.

"You have fifty years ahead of you, Gus! A few hours right now do not matter. Nataka is still weak and needs rest. Be sensible!"

In saying these words he did not suspect that the few hours did matter, after all.

Suchinow's flight surprised Kort but did not trouble him much. "All right!" he said indifferently. "As he appeared in the *Geryon*, thus he disappears again—unexpectedly and silently. I can sympathize with his wish to save the residue of his fame by making an independent landing."

"Do you think he will succeed in landing with his own power?"

"Why not? The *Geryon* brought him away from the moon, so that the rocket still has the supplies of energy provided for braking purposes. Let us not speak of it any more! Above all, do not mention the affair to Nataka at present! She might worry about her father's fate."

Joyfully the entire company looked forward to the landing manoeuvres. The speed of the ship, which had been greatly increased when at the moon,

was now so accelerated by the attraction of the earth that already on the next day the brilliantly lighted earth extended in vast expanse below the carrousel. The continents were so sharply contrasted with the darker oceans that one might have thought he saw below him an excellently constructed terrestrial globe.

The *Geryon* steered for the east edge of the earth, in order not to strike the atmosphere opposite to the rotation of the earth. This would have increased the relative speed and accordingly the danger from heat to a very high degree. Kort also wanted to land by daylight and therefore had to descend on the sunny side of the earth.

When the earth was so close that it no longer looked like a celestial body floating in space but rather like ordinary land, over which the *Geryon* was floating at an unimaginable height, Kort no longer left the control room. The most difficult part of the entire trip, the landing, was almost at hand. The radio of the ship was in action.

CHAPTER XXIV

ON EARTH

A TUMULT of joy seized the world when the first radio messages from the approaching *Geryon* were received by the great stations and sent all over the world.

Persons totally unacquainted embraced one another enthusiastically on the street. Banners waved from the houses. "Victory! Victory!" was the nation's cry of joy. The last crisis in parliament was forgotten. Party quarrels ceased, and pride shone in every eye, pride for the successful Kort.

The buildings of the great newspapers were at all times besieged by curious persons, waiting for the latest news, to spread it over the whole city in a flash. They did not seem to mind the cold, damp winter weather and the dirty slush in the streets.

There was a regular migration of the nations to Freetown. The little city swarmed once more with sight-seers, who were unwilling to miss the sight of the landing of the ship from the sky. Mother Barbara did good business. Her café room was full to overflowing, and she was proud of her fellow citizens who had brought so many guests to her house.

"Yes," she used to say, "we are having a celebration for Kort!" And no one could deny it.

Kort's radiograms had set the landing for February eighth. Very early in the morning the landing place was alive with people. The farmers to whom the adjoining fields belonged were complaining of the crowds that heedlessly walked over the fields, but against the great numbers they could do nothing. Temporary booths sprang up and refreshed the freezing mob with hot drinks. The bare wintry fields, covered with dirty grey snow, had in a few hours changed to a wild encampment, and the solid ground was being trodden into black sticky mud.

Luckily the fine rain of the past few days, which had been accompanied with snow, had ceased. Now and then a sunbeam even penetrated the moisture-laden clouds and caressed the swarm of people down at the landing place.

In the great semicircle on the shore around the space ship shed, guarded by soldiers, a band took its place. Film operators had set up high airy stands, from which they now and then took pictures of the ever moving masses. An army of reporters, pencil in hand, spent the day freezing.

Toward eleven o'clock appeared the automobiles of the government officials and the guests of honor. A whisper ran through the crowd at the appearance of Director Herst's car, from which he watched the sky through a majestic telescope.

"We shall have a surprise, your excellency!" he said to the government minister sitting beside him. "The

clouds cut off the view, and before we know it, the *Geryon* will break through and be here!"

"I am afraid that these dense clouds will cause trouble for Kort in locating where he is," said the grey-bearded man.

"Hardly!" replied Councillor Herst. "The taking of bearings by radio is so dependable that the *Geryon* can know its position exactly without seeing the earth. Anyway, Bergen is an expert in this. It was he who first used this method of determining direction and location on the flight of the *CO-1* to America. Since then taking bearings by radio has been greatly improved. Also . . ."

A wild cheer from the crowd swallowed up Herst's last words. To the southwest a dark spot had come through the clouds and was becoming visibly larger.

The *Geryon* was in sight!

It came nearer and lower in an oblique flight. The mighty wings shone brightly at times, when a sun-beam struck them. The egg-shaped hull could already be plainly recognized.

The cosmic speed had long been used up in the dense atmosphere, and the space ship was manoeuvring in the air like a gigantic flying machine. Then it swept low in a glide. The mighty mass soared close to the heads of the onlookers, so that many anxiously rushed away, and an incurable confusion took place. They could not escape the impression that in the next minute the uncanny structure up in the air would rush down and bury the people under its steel mass.

Once more the *Geryon* flew over the shed, just twenty meters in the air. Then it went out over the lake. Far out there it turned again to the shore and descended easily and surely. The water splashed high as the wonderful bird settled down on the lake and cut through the foaming waves.

The crowd began to move. They swelled down toward the shore, and the police cordon had to struggle hard

to keep open the space between the shed and the landing bridge.

The little auxiliary exhausts rattled a few times more. The ship rushed on, became slower in its course, and then lay rocking by the pier, built far out into the lake. It was a lifeless steel shell, which no one could have thought the monster which a few seconds before had floated freely in the air.

BREATHLESSLY they waited for the appearance of the commander. Herst's car drove close to the pier, and the occupants got out. A few soldiers quickly ran a gangway to the entrance of the *Geryon*.

At last a man appeared in the dark opening. A deafening cheer came from ten thousand throats to the conqueror of space and drowned out the sounds of the band.

"Hurrah for Kort! Hurrah for the *Geryon*!"

The crowd went wild. The man on the gangway waved his hand in a tired fashion. It was Bergen.

Oppressed and slowly, as though a vast weight rested on him, he walked to Herst, straightened up with difficulty, and announced briefly: "The space ship *Geryon* safely landed!"

"Welcome to you brave men!" cried Herst heartily, shaking Bergen's hand. "But—" he hesitated a second, while an anxious question was in his eyes, "where is Kort?"

Bergen was relieved of an answer. A silent procession came slowly over the pier. Dr. Finkle came first, bent and weighed down, like all the rest from on board the *Geryon*. Unused to the earth's gravity, they were bent under the weight of their own bodies and could stand upright only with a great effort.

Then followed the members of the crew, carrying a bier on their shoulders. Behind came Kort, his head bare, pale and distressed.

He did not see the people who had come on his day of glory from all parts of the country. He did not hear the incessant enthusiastic applause. He

did not know that all eyes rested proudly on him, the hero they were celebrating this day, who had accomplished what seemed impossible.

Silently he followed the men who were carrying what was dearest to him. There was infinite sorrow in the dull look which he kept fixed on the motionless shrouded figure upon the bier.

Kort's lips moved as though in pain. He turned to Herst.

"I congratulate the nation for this success!"

That was all that he could say to the people who had awaited him in feverish excitement and were ready to heap him with honors.

The day which was to have been Kort's most sacred day of honor and happiness had become the bitterest of his life. The suddenly returning gravity had pressed the body of Nataka, weakened and unused to weight for many months, with extreme violence upon her bed. The earth itself, which had been the last desire of this much tried mortal, had accomplished what the cosmos had been unable to do. Her heart, which for half a year had defied the most awful death, had ceased to beat a few hours before the landing.

THE FATE OF SUCHINOW

WEEKS had passed.

A veritable flood of congratulations came to the victor of the *Geryon*. Countless interviews took place along with countless banquets of celebration. The ceremonial founding of the Kort Space Ship Company crowned the work by Lake Conway, as the final act of what was past and the initial impulse to new deeds.

All the newspapers on earth described the bold flight, showing the "lucky ship" in all sorts of pictures, and connected with it the wildest hopes for the future development of the epoch-making invention. In all civilized countries there was striving to be able to greet the men of the

Geryon within their frontiers as guests. Kort's name resounded around the earth.

But Kort cared little about the uproar caused by his deed. In restless activity he sought to still the gnawing grief for Nataka. With fiery zeal he worked on the projects of the company. The possibility of travelling in space was now proved. Now it was a matter of using what had been done. He had to utilize the experience gained in the *Geryon* to build new and more efficient space ships and to take possession of the moon and the neighboring planets. His boldest hopes were approaching realization, but there was still a long way before him.

In vain they waited for the landing of Suchinow. The rocket remained unheard of. Certainly the observatories had watched it when the bright spot left the space ship. But that had been the last word from the rocket. The fate of the unlucky Russian remained a riddle. But weeks later light was cast by the news from an overdue whaler, coming back from the south coast of Greenland.

The crew of the ship had been surprised on the eighth of February by a singular phenomenon. Suddenly, though there had not been a breath of air, there was a hissing and roaring in the air, as though a cyclone were coming. Before the terrified crew came to their senses, a mighty water-spout rose to heaven not far from the ship, disappearing equally quickly. When they had passed by the spot, they had been struck by the warm air permeated with clouds of sulphurous smoke. This event was so odd and inexplicable that the captain took exact observation of the locality and put all the details of what he observed in a full report.

When Kort learned of this report, he said quietly, "Suchinow did not think of the atmosphere, which we entered from the side. Probably the torpedo burst open in the atmosphere on account of the onesided pressure and plunged unguided into the sea."

HONOR BY FORGETTING

SAM'S practice increased. He had a great rush of real and imaginary invalids, who stared at the ship's doctor of the *Geryon* as at a strange beast, until it got too much for him. He kept curious persons away by charging outrageous prices.

With all possible means he stirred the zeal of his brother-in-law to work. He carefully avoided any reference to Nataalka, hoping that time would heal all the scars.

But one day, when he had just come to see Kort, to invite him to take a walking trip, a great yellow envelope was delivered, directed to Kort in person, bearing the return address of the Magyar Bank.

"What have you to do with this Hungarian bank?" asked Sam casually.

"I am accustomed to letters from persons I do not know," replied Kort indifferently, as he opened the letter. "I have had more mail in the last few weeks than I did in the ten years before!"

But scarcely had he looked at the papers within when his indifferent expression vanished and his heaving breast showed his emotion.

"What is it?" asked Sam eagerly.

Without saying a word, Kort went to his workroom and locked himself in.

Sam walked uneasily up and down. He feared new disturbances of his brother-in-law's mental balance, secured with so much trouble, though he could not imagine how a letter from a bank could trouble Kort in any way.

A half hour passed without Kort's reappearance.

Sam could no longer control his uneasiness, and he desired to be admitted to the engineer's room.

"Excuse me, Uncle Sam!" said the latter as he opened the door. "I totally forgot you were here."

He seemed calm, quiet, and even smiling sorrowfully. Without being

asked he passed Sam the letter from the bank. This stated that now, after the death of the rocket-operator Skoryna had been established, the latter's disposition of the insurance money had been opened. The sum of twenty thousand English pounds had been willed to Mr. August Kort of Free-town. As soon as Mr. Kort furnished proof that Skoryna's death had not been natural but had been due to a mishap in the rocket.

"These people are causing themselves too much trouble!" said Kort impatiently, before Sam had finished reading. "Mr. Vacarescu may be at ease. I shall offer no proof, and he will not have to pay."

Then he folded up a letter which had been enclosed with the letter from the bank, placing it carefully in his breast pocket.

"The last words from someone now dead!" he replied to Sam's unspoken question. He sat down by the stove and stared silently into the flames.

"Gus!" Sam put his hand on the engineer's shoulder. "Leave the dead in peace! It was to be! And . . ." he hesitated a moment, "and it was best so!"

"Yes, it was best so! Are you going to grieve for a person who died in the moment of greatest happiness? You belong to mankind, and the world has a claim upon you. The man must be free and unchained by any ties, who is called upon to conquer the realm of planets. You will complete your task for the sake of mankind. You are mistaking the will of this great woman, if you eat out your heart in mourning for her. Thank her by your deeds, and honor her by forgetting her!"

Kort raised his head. "You are right, Uncle Sam!" he said slowly. "To be alone and solitary is the lot of him to whom the vibrations of the universe are familiar and the currents of a great soul are unknown. I will forget Nataalka for the second time, that her work may live on!"

Double Destiny

By HELEN WEINBAUM

With half the world's population wiped out by the terrible radium plague, Louis Demuth dares to withhold the only cure! Accursed by every living soul on Earth, he suddenly finds himself faced with a man from a land long perished—a man who is himself!



"Drop your gun to the floor—or I'll destroy this last bottle!"

CHAPTER I

THE AMAZING IMPOSTOR

DR. LOUIS DEMUTH switched on the radio in his firelit study and settled down to enjoy himself, well satisfied with the

world and his position in it. Today marked the final meeting of the Convention of American Scientists, a gathering of the finest minds in the Country—and all waited tensely for his words.

Let them wait! Demuth smiled

smugly. He was going to enjoy watching their crestfallen, fear-chased faces when it became apparent by his absence that he had decided not to reveal the all-important secret he possessed for the treatment and eventual cure of radium poisoning.

Since the new method of extracting radium had proved practicable, world use of the element had increased enormously; streets shone with radium glo lights; in public buildings radium heating units were used exclusively. But, as a result, the disease had swept civilized countries like a monstrous, black plague; over half the population faced certain death from the dread poisoning.

For awhile after Louis Demuth's isolation of the Neo-hormone, he had kept the world supplied with enough of it to temporarily stave off the disease. But for the past few months, he had steadfastly refused either to produce more or to reveal the secret of its derivation. Scientists pleaded, then demanded.

"For the sake of humanity. You're not immortal. Suppose you were to die with the secret still locked in your mind? We'll call a Convention, give you a chance to make a grand gesture, to become the most revered man in history."

With time, their messages grew peremptory, desperate, threatening, as their own frenzied efforts to discover the source of the Neo-hormone failed.

At last he spoke: "Call your meeting. If I decide to make my serum public property, I'll come to the Assembly Hall on the final day."

For the sake of humanity! Demuth's mouth twisted in an ironic smile. For the sake of Louis Demuth, he'd keep his own council. Confidently, he retraced in his mind the power for which he would barter his secret, weighing in the balance against it the temporary gratitude of dying America, a gratitude which would decrease in proportion as the disease lessened

and people's wasted bodies once again took on the glow of health.

Gratitude. Pah! Power was the thing He savored the moment in anticipation. Demuth and Musler: rulers of the world, with himself the real power, due to the secret weapon he possessed.

On the table beside him lay a code letter from Monocracy headquarters in Europe. Musler, Dictator of all the world save America, bargained with Louis Demuth, asking almost humbly that radium poisoning treatments be withheld from America for awhile.

"We now possess sufficient Neo-hormone serum," Musler wrote, "to keep people of the Monocracy in good health until the day when we are all one nation. Withhold treatments from America until both their spirits and bodies are weakened. At that time, our Air Force will strike. Once America is part of the World Monocracy, we shall rule it together. . . ."

In his quiet study watching the television screen come to life, the assembled scientists waiting nervously for his appearance, Demuth reflected that keeping the best minds of America waiting on tenterhooks for his words was but his first taste of power. The world lay in the palm of his hand, was his for the taking—or would be, as soon as he gave Musler word to attack.

With a feeling of well-being, he saw the tense expectancy in the learned, upturned faces, noting ironically that over half showed signs of sidious radium poisoning.

There was a heavy, pendant silence, broken suddenly by a nervous laugh.

"Fools," Demuth thought, "whistling in the dark! If I wanted their adulation, wouldn't I have arrived early to make the most of my grand gesture? It is long past the hour when I said I would appear. By now they should be certain that my decision was against altruism."

Suddenly a small doubt hit his mind. The face of Professor Carra-

dine, oddly happy, blocked out the assemblage on the screen.

"My friends," Carradine spoke in a voice low with emotion, "this day will color history. One man, with a selfless, magnanimous gesture, gives America her life. The disease which saps our strength is to receive adequate treatment. But," he paused, "my happiness betrayed me into taking some of the glory from the man who most deserves glory in the world today. That man should be the one to make public his decision. My friends," Carradine stepped out of the televisor's range to reveal the long assembly hall, from the end of which a figure moved down the aisle, "I give you—Dr. Louis Demuth!"

In his study, Demuth started forward in the chair, his eyes wide with disbelief, amazement! This must be a hoax, engineered by men who, knowing at last that he had no intention of revealing his secret process, had staged this mock scene in a last, vain hope that, seeing the approbation his proxy received, Demuth himself would relent.

THE approaching figure was making slow progress through the hall. Dignified scientists pounded his back, whistled, cheered, stretched out their hands in a child-like desire to touch him.

Demuth's eyes clung incredulously to the screen. Who was this man, and how was it possible for him to deceive such a gathering? A great number of those present were close friends of Demuth's own. Couldn't they tell the stranger was an impostor.

His amazement grew as the man mounted the platform. Then, his throat closing in strange, irrational terror, his body tensing, he glued his eyes unbelievably on the screen. *The man was a perfect duplicate of himself, the face his own!*

"Impossible!" The word reverberated strangely in the silent room. Such a perfect counterpart of another human being *could* not exist! Makeup

could achieve it; some small detail would be different, some omission or too well defined mark give it away. But here no detail was different, no slight variance of expression, not a split hair's distinction between them.

In the moment before the man spoke, Demuth strained his eyes to find some error. The facial contour was identical to his own, identical in every detail even to the small mole under the left eye, to the two front teeth slightly more separated than the rest, to the queer swirl of hair in the eyebrows above the nose. Then the man spoke, *and his voice had the same timbre as Demuth's own!*

"Fellow Americans, as Professor Carradine hinted the derivation of the Neo-hormone will be made public. The cure of radium poisoning is too vitally important to the people of our country for it to be locked in the mind of one man any longer. However, as the technical details would be of little aid to the layman, I'll not tax your ears with them tonight. Tomorrow, at a meeting of representative physicians and scientists and in the presence of the press, I shall give all the knowledge necessary for extracting the Neo-hormone serum. In a few days clinics will be reopened. Treatment will be denied no one. Supplies will be limited at first, but the time is not long now. Good night and good health to you all." He bowed, shook hands with Dr. Carradine and left the platform to join a slight, titian-haired girl waiting below.

Claire! That above all made Demuth burn with anger. What right had this stranger to pose as Louis Demuth with the girl the real Demuth intended to marry? Still, how was it possible for him to deceive Claire?

He rubbed a hand over his hot forehead, trying to weave scattered threads into a comprehensible pattern to determine what effect the broadcast might have on his own ambitions. Enraged at Demuth's apparent duplicity, Musler might seek re-

venge, might even go so far as to publicize Demuth's treasonous agreement with the inimical Monocracy.

Then, rationalizing, he calmed his mind. The worry was baseless. Tomorrow at the meeting of scientists and physicians the whole thing would come out proving the stranger a charlatan for it was impossible that he could know how to produce the secretion called Neo-hormone. Louis Demuth, and only Louis Demuth, knew that!

The agreement with Musler might still be consummated; despite trickery, he would achieve the power he craved.

Still, this strangely perfect replica of himself might make further trouble, he reflected, remembering the way Claire had looked on the television screen after the broadcast. The man must be stopped!

Seizing his hat and coat, Demuth hurried from the house and hailing a taxi headed for Convention Hall.

THE LONG SLEEP

TWO men stood on the shores of A-maris watching the foaming waters inch up the sand and then recede. The sun was high overhead, the day cool; yet curiously beads of sweat clung to the old man's brow.

At the water's edge, a strange metal object, its strongly hinged hatchway upraised, gleamed smooth as a seal, golden in the sunlight. Heaving gently on the mobile waters, it looked like a thing eternal, as immutable and unsubject to decay as time itself.

"This is the moment, Lans Pyrh," the elder said. "Speak if you've a mind to. The casque is ready, the calculations made, yet if you fear the experiment, little will be lost. After all," he stroked his fine beard, "you alone will know which of us held the right theory. Vindication will do no good to my old bones, mouldering to dust a million years hence beneath the soil."

"I am not afraid, old Pater Cocles," the young man answered. "Since Cloelia wed Tal Curius, life has been wearisome for me."

"Ah," the old man smiled, "only youth can find life wearisome. To us who near the grave, it unfolds like a flower with each passing second. Wearisome," he repeated. "A great and mighty civilization you leave, my son. We have advanced much in the 50,000 years since our race began."

For a moment Lans Pyrh seemed to weaken, grasping the old man's arm importunately. "There is room in the casque for two. Even now it is not too late. It will be lonely," he added wistfully, "waking over a million years from now in a world unknown to me."

"Yes, it will be lonely," Pater Cocles agreed, "but since time began, it has been the fate of scientists to work alone. Alone for seven years, I calculated all possible combinations of the 5000 genes and 49 chromosomes, calculating with it the billions of possibilities which lie in the atomic pattern which is you, until I determined to the day and year when a man who is your perfect counterpart must appear. Three more years it took me to design the casque to keep you safe from the ravages of time, to achieve the perfect egg-shape to withstand the terrific pressure at the bottom of the sea. Two years I gave to perfecting the drug which will hold your life suspended. All this time I was alone. And you will wake alone. Lans Pyrh, innumerable years from today, to find your duplicate and prove me right."

The young man smiled broadly, his teeth showing white against his wind-tanned face, the two front ones slightly more separated than the rest. "That I will not give, old man. I hold that my double will be like me in every way, not only in mere physical appearance, but in character, dreams, ambitions; in a word, he will be another Lans Pyrh, but in a different body. He will have developed identi-

SFQ

cally to me despite the new civilization which nurtured him. You are a scientist—you deal in fact. You must then agree that the factual elements—the perfect coincidence of atomic pattern, the identical combination of genes and chromosomes will make us faultless mental and physical duplicates.”

“Science is not entirely factual,” Pater Cocles answered, “but is still bent by intangibles. One of these is environment. Search and find your double in this future world and you will prove the truth of my words. He will look like you, speak like you, walk with the same determined gait, but there will be something in his inner self, his character, his spirit if you will, which is not incarnate in yours. You will be two different men, acting and reacting differently.”

Lans Pyrh pulled his robe tighter. “There is no end to this argument, then. Neither will be convinced until he sees. So come with me, Pater Cocles, that I may smile at your confusion when you find this man a million years from now not only looks, but thinks, dreams, reacts identically to me. Come with me to meet the second Lans Pyrh.”

“It is not possible, my son. My body is too old to lie beneath the sea in terminable years. I should wake up but to die, and I can die here as well. But your youth will take you through. The drug will suspend animation until the appointed time. I have figured out the dose to the fraction of a dram: one needle, full to the mark. Keep the rest in the vial; it may serve you well in the new world. There is a time mechanism on the casque. When the salt content of the sea has increased to a certain amount, the anchor will drop, the casque rise to the surface and the hatch open. At the same time the drug will lose effect and you will regain consciousness. That day will be exactly one million, one thousand, eighty-five years from today. Do not fear, the casque is safe; water will not corrode it.”

FOR an instant, the eyes of the two men meshed. Pyrh extended his hand and the old man clasped it; then turning, he stepped into the egg-shaped casque.

“A moment.” From inside his robe the old man drew a black, polished stone. “Take this with you.”

Lans Pyrh’s eyes rested questioningly on the stone, black as ebony, its surface smoothed to a fine, translucent gloss.

“A million years from now it will be a rarity, if not unknown,” Pater Cocles continued. “I have calculated that by then all available deposits will be gone. Guard it carefully, its sale to a museum or private collector should make you independent for life. And now goodbye, Lans Pyrh.” He waved his hand in salute. “May the powers of good go with you.”

“Goodbye!”

Putting the stone beneath his robe, Pyrh seated himself in the casque, started the gravity engine, and headed out to sea. In a few minutes, he would be irrevocably severed from the only world he knew. It was with a pull at his heart that he turned his eyes back to the slight figure of Pater Cocles standing on the shores of A-maris. The old man had been like a father to him; it was hard to leave, knowing he would never see the thin, aesthetic face or hear the kindly voice again.

Far from shore he raised a hand again, seeing dimly the old man wave in answer. Then with his last human tie lost to view, Lans Pyrh turned his eyes to Tera, whose glistening towers rose like a toy city along the shore. Half-sadly he viewed the place of his birth, knowing that never again in his lifetime would he see it as it was today, knowing, too, that his frail body would long outlast the sturdy towers, that his human eyes would look on the world a million years after the time-resistant stone and granite, considered almost impervious to change, had mouldered to dust.

With a last half-regretful look at the world he was leaving, Lans Pyrh shut off the engine. Indeed, Pater Cocles was right: the fifty-thousand-year-old civilization was a grand and glorious one. Would the one he awoke to be as great?

No matter. He sighed. Cloelia had spoiled his taste for living in Tera, where familiar scenes brought recurrent, painful memories of her betrayal. So, on to another world . . . another life. . . .

He started the perpetual calendar to ticking, watching for a moment to be sure it caught before he bared his arm to inject the drug with which Pater Cocles had supplied him. Then, as he felt his senses numb, he dropped anchor, stretching out in the interior of the casque, closing and fastening the latch securely above him so that his body lay entombed in the metal shell.

There was a swift surge of motion, a thrumming in his ears. Before the casque sank halfway to the bottom of A-maris, the noises ceased. He lay breathless, dreamless, lifeless—perhaps dead. . . .

CHAPTER II

WORLD OF 1985

LANS PYRH shifted his body slowly, tensing long unused muscles in an effort to ease the pain in his stiffened joints. Memory had not yet wakened. Still unaware of his surroundings, he felt icy air chill his lungs.

It was dark . . . dark. . . . As he opened his eyes a surge of fright closed his throat. He raised one arm to feel the small enclosure, the walls at side and top. Where was he?—buried alive in some forgotten tomb?

He forced memory back, recalling dimly at first the face of old Pater Cocles. Then slowly, realization dawned.

Lighting his neutron lamp, he was shocked at sight of the uncorroded

interior of the casque. His robe lay in dust about him. Was it possible this man-made shell had endured for over a million years? Was it possible he had lain suspended of life for such an interminable span of time? It might have been only yesterday that he had left Tera, so blank and dreamless had been his rest. Perhaps Pater Cocles' drug had lacked potency and it *was* but yesterday. . . .

A chill struck his heart. If the old man had miscalculated, if the drug were faulty, he was doomed to death in this coffin beneath the sea. He turned his light on the still ticking calendar beside him. It showed the third day, the fourteenth division of the year 1,050,248. Quickly he did the calculation in his mind: it had been 49,163 when he left. He had slept for the allotted 1,001,085 years, then; the drug had worked perfectly! Pater Cocles had figured that at this time to the day, his duplicate must appear.

But what of the time-lock! Fear caught his mind and held it static. What a fool he had been to let his life hinge on the working of a small metal mechanism, to expect it to withstand corrosion under water for over a million years! Innumerable factors could doom him. Suppose the salt content of A-maris had not increased, but decreased, contrary to Pater Cocles' expectation? The casque might lie another million years beneath the sea.

If only the anchor would release! Pyrh pounded heavily on the casque floor, hoping a sudden jolt might start the whole mechanism working. His efforts brought no results.

Fools! Fools! He beat his forehead distractedly. Fools, to attempt to understand with their puny human minds the action of nature for such a length of time! Every minute, every second in each year brought another element to throw off their calculations.

And yet . . . the drug had worked. . . . According to the evidence of the

perpetal calendar, he had come back to life at the exact day planned. Save for the gnawing cold and thin, fetid air, he felt as strong as ever. The drug had worked, *but what of the time-lock?* That would defeat them!

The irony of it! To lie for time inconceivable beneath the sea, wake for a passing moment, then die for lack of air because the mechanical creation of an old man's brain proved faulty?

Suddenly he bethought himself of the remainder of the drug Pater Cocles had given him, then quickly discarded the idea of again throwing his body into a cataleptic state. That would be only prolonging the agony. He preferred to die here and now, if die he must.

He breathed shallowly in an effort to conserve the air as long as possible. Yet, why fight Death when His heavy hand approached? Rebelliously then, he filled his lungs, occupying his mind with memories of his lost world to keep fear from it. He saw the tall, glistening spires of Tera as they looked when he headed out to sea, heard the strong waves of A-maris fill the city with their throbbing beat upon the shore; remembered the kindly face of Pater Cocles, the face of Cloelia.

Cloelia! How beautiful she had been—and how deceptive. He saw her cold white face the night she told him of her betrothal to Tal Curius; felt her cool hand as she had given it to him in parting. Misery struck him anew at the thought of her in the arms of another. Over a million years ago, yet still the picture of Tal Curius with Cloelia made him faint with jealousy . . . or perhaps it was that the air in the casque was getting thin. . . . He lapsed into dreams. . . .

A heavy thud penetrated his dull consciousness and prompted him to fight once more for life. He gasped the almost non-existent air frantically, hearing movement and sound out-

side the casque with new hope. The anchor was released, the casque was shooting to the surface. If only he could live until it reached there . . . until the time-lock on the hatch opened.

HIS lungs felt on the point of bursting. Curse Pater Cocles for failing to take into account those few minutes while the casque surged upward, for failing to provide an air mechanism to keep him alive now that freedom loomed so near!

The upward motion ceased. Slowly the hatch opened; the sun shone full upon him, blinding him with its brilliance.

After a moment, Pyrh sat upright in the casque, filling his lungs with the fresh, warm air, rubbing numbed fingers and toes to force blood to circulate through and warm them. At last, his physical comfort regained, he looked about, finding to his surprise that either the casque had drifted farther from shore despite the heavy anchor, or the waters had risen. The shore line was only faintly visible, though he remembered distinctly that he still had clear sight of it when he dropped anchor off the shores of Tera.

He looked eagerly toward land, only to find—the towers of the city gone! Only green verdure and rolling hills greeted his eyes. Perhaps humanity had died, leaving him sole survivor in a world of wilderness.

Anxiously he started the gravity engine, hearing its dependable hum with a feeling of relief. Except for the bad moments under the waters of A-maris when he had nearly suffocated, Pater Cocles had calculated accurately. All that remained now was to find his own double, to discover whether the old man's predictions held true in that respect as well.

Landing on a sandy shore, he beached the casque carefully, taking the polished stone from its interior and tying it beneath the covering of leaves he made for his body.

There was no trace of a living thing; the sand lay smooth and untrodden as far as he could see. However, in the next moment, a movement sounded in the brush. He turned, startled.

An animal emerged yelping furiously. Strange, Pyrh thought, that such a small animal would attack. Or—a doubt struck him—was it an attack? The animal was running in circles, its tail in constant motion. It looked almost like an invitation to play.

Tentatively Pyrh stretched out his hand, laughing loudly at the feel of the wet, warm tongue on it. Then, from the brush came a call, a human call, Pyrh knew, though he could not understand the words.

"Here, Sport!"

At the sound, the animal bounded into the brush and disappeared.

Pyrh followed it, happy now in the certainty that the world was not uninhabited. Some distance in, the undergrowth ended and Pyrh saw a house centered in a square of cultivated land. But what made his heart bound was that not ten feet away stood a man.

The stranger was thin, wasted, emaciated, his hair dry and colorless, his skin green with illness. Yet Pyrh saw to his relief that the cavernous eyes were intelligent and that, a kindly light lay behind them.

At sight of Pyrh, he stopped short, staring in amazement at his strongly-built, crudely clothed body. It was a full moment before he spoke, and, as before, his words were incomprehensible to Pyrh.

Yet here and there he caught a meaning. People of the old world had developed an embryonic sixth sense, a half-telepathic ability to gather meanings from the spoken word even though the language was not understandable to them. The art had been fostered, scientists believing it presaged the development of true telepathy.

Now, applying this embryonic sense

to the stranger's voice, Pyrh gradually found the meaning of a few words becoming clear.

"My name is Henry Morgan," the man said.

"Henry Morgan," Pyrh repeated slowly after him. Then, pointing to himself said, "Lans Pyrh," and answering the unspoken question added, "Tera."

"Tera?" Morgan repeated puzzled. "Where is Tera?"

With the limited words at his command, Pyrh thought it best not to attempt an explanation.

Quelling curiosity for the moment, Morgan said, "At any rate, it must be far away. Would you like something to eat? Eat!" He pointed to his mouth.

Pyrh nodded eagerly. Even without the gesture, Morgan's meaning had been clear.

Following the man up to the house, he stared curiously about him. Nothing was as it had been. Every vestige of the old world was gone.

Inside the house, a wall-hanging caught his eye which, by the very meaningless of its design, he knew to be a map. Intently he scrutinized it. As he expected, Tera was not shown. Even Oppidum, the large coastal city, existed no longer, and where they had once been, Pyrh could not determine. Continental coast lines had changed drastically. Everywhere was water. To Pyrh, remembering the old world, it seemed that little land was left. The A-maris and Pa-maris Seas swamped everything. Pointing to a strange inscription in the center of the East Ocean, he looked questioningly at Morgan.

"Atlantic Ocean," Morgan translated. "We are on its coast."

PYRH pointed to spots on the map at random, learning the strange names of countries and cities in the world to which he had come, until at last his finger rested on a small figure deep in the lower corner. In his

day, he knew, there had been no land there.

"Only the date," Morgan answered, "1985."

1985! Pyrh's perpetual calendar had showed the year as 1,050,248. Where had the lost years gone? He pondered, deciding at last that sometime in the past while he had lain unconscious, civilization had died, perhaps due to another ice age, only to begin again not quite 2000 years ago. He smiled at an ironic thought: he had slept over a million years—and wakened to a civilization younger than the one he had left!

Morgan's curiosity concerning his strange guest could not be held in check longer. Even as his wasted body bustled about preparing food, he asked questions. So gradually, by connecting meanings with spoken words, Lans Pyrh gained understanding of the language he must use from now on.

Morgan was a retired professor. The sickness had made it impossible for him to continue teaching, he said. He set strange dishes before Pyrh: a white, mealy vegetable called Potato; the flesh of an animal called Meat. Pyrh ate ravenously, savoring the odd flavors despite his haste. Finished at last, he pushed the plate aside, wondering how much he should reveal to Morgan of the strange mission on which he had come.

"Have you any money?" Morgan asked. By now he realized that the more he spoke, the more quickly this stranger would find words to reveal his own identity. "The world runs on money, you know. You won't get far without it."

Smiling broadly, Pyrh showed the polished stone Pater Cocles had given him.

Morgan peered at it intently. "Is it precious?"

Pyrh nodded.

Half to himself Morgan said, rubbing a finger over it, "It seems much like coal."

Pyrh shook his head proudly in

agreement, hardly able to contain his excitement.

"Coal," the professor repeated, "do you mean coal with a diamond in it?"

"No. Only coal, precious in itself now."

For a moment Morgan looked at him speculatively, then threw back his head to laugh loudly. "I'm sorry," he said at last, "but it did sound funny. Come with me. I'll show you why."

In a bin downstairs Pyrh saw to his astonishment tons of the black mineral lying dull in the half-light.

"Your stone is not valuable," Morgan said regretfully, "We have all we need of coal—and more. Where do you come from, that they think it rare?"

"From this very land."

The professor looked skeptical, considering Pyrh's strangeness, recalling the remarkable aptitude with which he grasped a language obviously strange to him, the way he had questioned about the map. "How did you come here, Lans Pyrh?" he asked softly.

"From the sea."

"But how did you come from the sea? By boat?"

Pyrh nodded.

"If you came from this land as you said," Morgan mused, "why did you need a boat to get here?"

"Come. I will show you."

A few minutes later Morgan stood open-mouthed before the metal casque, lying where Pyrh had beached it. Remembering suddenly that Pater Cocles had placed a stimulant inside to warn him on awaking. Pyrh found it and offered it to the professor.

He took a long draught, wiping his lips appreciatively when he finished. "Pretty smooth," he remarked. "How old is it?"

"Older than your civilization."

"Over two thousand years old?"

"Much over," Pyrh answered, smiling into his astonished eyes.

Intently then, Morgan studied the metal casque, noting its egg-shaped contour, its firm construction and the only slight erosion caused by the water; deciding it was within the realm of possibility that it might have endured countless years under sea.

"How long did you lie in this?" He turned back to Pyrh.

"Over a million years."

"A million years!" The professor mouthed the words slowly, letting them linger on his tongue as if he needed time to comprehend the vastness of the thought.

"So that's why you brought coal," he concluded. "You figured that in a million years the supply would be exhausted. No, my friend, while we dig deep for it, there is plenty left . . . plenty. . . ." His voice dwindled off as his eyes were arrested by the casque, gleaming in the sunlight.

After some moments, he looked up. "Don't be disappointed, though, Lans Pyrh. You *have* brought something of value. This metal is gold, and gold is the basis of our exchange. We'll dismantle the casque, and tomorrow I'll take you to New York, where you can sell it. It will bring enough to keep you comfortably."

As he rose from his knees, his face paled; he put a hand to his forehead, swaying dizzily.

"What is the matter?" Pyrh asked.

For a moment, Morgan's sunken eyes glowed. "You've come to a sick world, Lans Pyrh, a dying world. Far better for you to have lived your life out in the world you knew. Here one man sits like a King in his castle, gloating, while the people die!"

CHAPTER III

DIFFICULT DECISION

DUE to his highly developed sixth sense, Lans Pyrh learned both language and customs quickly. While he did not confide wholly in Morgan as to the reason for his appearance in

America, he elicited a promise that for the time being Morgan would say nothing about the strange manner of his coming. Pyrh was aware of the news value of such an astounding revelation, and had no wish for the attendant publicity until he had achieved his objective. However, by questioning the professor without revealing this objective, he learned enough to conclude that New York City was the best place to begin the search for his double.

Pyrh had been a biologist in Tera; logically a man with the same atomic pattern, the same arrangement of genes and chromosomes, would be found somewhere in the scientific field.

With Morgan's help and advice, the golden casque had been disassembled and profitably sold. After making the professor a present of part of the proceeds, Pyrh thanked him and bid him goodbye. A Convention of Scientists was scheduled to meet in New York in a few days, and he meant to begin his quest there.

The day the Convention opened found him walking toward the auditorium, considering the difference between the civilization of Tera and the one to which he had come. In innumerable ways, the new one was less advanced. Space-ships had not been perfected; weather control was unknown; machines were still driven by clumsy combustion engines instead of the compact gravity engine of his day; and traffic regulations were almost barbaric in their inefficiency—hardly a day passed that someone wasn't killed. Pyrh thought it a needless waste of lives when so simple a thing as different levels for pedestrians and machines would solve the problem.

Yet America in 1985 had much to recommend it—tobacco, for example, zippers, and watches. Most of all, Pyrh admired the compact and beautiful timepieces of 20th Century America. A simple thing to compress mechanical movement into a tiny

case, yet in his day it had not been thought of. Tera had been rife with sundials, so constructed as to cast a shadow even on sunless days and from certain stars at night, but every time you wanted one, you couldn't find it—a little thing, but annoying.

Shifting uncomfortably in his modern clothes, remembering regretfully the soft, silken robes of Tera, Lans Pyrh entered the elevator which would take him to the auditorium roof where the Convention was meeting. As he stepped into the hall, a babble of voices filled his ears. The meeting proper had not yet started; small groups talked among themselves.

Looking about curiously, Pyrh found that even among men of science, one out of three suffered from the prevalent poisoning. Surely the one man who knew the cure for it would soon reveal it. In such a high civilization, no one could be so brutal as to sentence countless numbers of his own race to death. If worst came to worst. . . . However, he must give this man sufficient chance to do the thing himself.

He walked through the hall, scanning each face carefully in the hope of finding his duplicate. In his preoccupation, he did not at first notice that groups parted as he approached, men drew away from him glancing sidewise with a thinly veiled hatred in their eyes.

Suddenly he realized that the little section around him had lapsed to silence, that he stood alone in an empty space with the eyes of those nearest turned on him. Uncomfortable, he turned and made his way to the door.

"Well, Louis." A man spoke softly to him. "It's rather brazen of you to appear today, unless," his voice rose hopefully, "you've decided not to keep us in suspense longer."

So it had come! Pyrh's heart pounded excitedly. He had been mistaken for someone else, undoubtedly his double, the man he had waited over a million years to find. He fenced

for time, unwilling yet to reveal the mistake.

"Keep you in suspense for what?" he queried.

"I was once a good friend of yours, Louis," the man said coldly. "You know well enough what I mean. Are you going to reveal the source of the Neo-hormone serum or not? What else would I be asking about at a time like this, with half the population dying."

"Forgive me," Lans Pyrh spoke softly, running a hand over his forehead as if he were bemused, "but suddenly everything went blank. A case of passing amnesia, I suppose, but very annoying. Very annoying! Do you know, at this moment, I cannot even recall my own name—let alone yours."

FOR a moment, sympathy colored the man's eyes, to be immediately followed by anxious fear. "Do you mean you've forgotten the process?"

"No," Pyrh smiled. "I can remember that, but everything else seems hazy—everything about myself: my name, my family, my friends. Even the way I alone came to be in possession of the process, its use, the reason you wish it revealed—"

"I can help you there. You are Dr. Louis Demuth; you found a way to isolate the Neo-hormone yourself, you have no family and, due to your attitude during these past months, few friends. The Neo-hormone serum is used, as you must recall after looking these minutes at me," his wasted face twisted ironically, "to counteract the effects of radium poisoning from which millions of your fellow beings are suffering. The reason scientists are anxious to have you reveal the process, would be obvious to a man with a spark of humanity in him which, Demuth, I am firmly convinced you are not! And now," he bowed coldly, "if you will excuse me."

Left alone, Pyrh came to the appalling realization that the man he had told old Pater Cocles would be

but "another Lans Pyrh in a different body," was the most cruel and despicable man in the world today. As if he were standing again on the shores of A-maris he heard Pater Cocles' answer *there will be something in his inner self, his character, his spirit if you will, which is not incarnate in yours. You will be two different men, acting and reacting differently.*

So Pater Cocles had been right! Demuth was evil, with an ambition for power which Lans Pyrh had never possessed. Too bad the ancient could not hear justification of his claim. With the memory of kindly Pater Cocles came a violent revulsion toward the new world and the man Demuth.

A soft, womanly voice spoke from beside him.

"I should think the electricity of my presence would have roused you from your day-dreams minutes ago."

He looked down at a slight, delicately featured, titian-haired girl. "It did." He smiled into her red-brown eyes. "My dreams were sorely troubled."

Her face sobered. "And not without cause. Your dreams should be troubled, Louis. Or have you decided," her voice became eager, "to let the world have your process?"

He paused uncertainly, not willing to brand himself again as Demuth before he learned the identity of his companion.

"You seem strange," she continued, "softer somehow. Louis," she put a hand on his arm. "Now I am sure that you are going to do the humane thing."

"What makes you sure?" He parried for time.

"Perhaps it's egotism. Perhaps I can't imagine anyone willing to give me up for an evilly-conceived ambition. For that's what must be at the bottom of your refusal to do the right thing. So I won't marry you, Louis, unless you prove yourself more a man and less an autocrat. I've hated you

sometimes," her deep eyes burned, "visualizing you comfortable and healthy in your warm library gloating over the power you possess. I'll never marry you until you make your treatment common property. I'd rather remain Claire Reed, a nonentity, than be famous as a princess of blood. And that's what I would be. The blood of the dying drips from your hands already." She turned angrily to leave.

"Claire!" Grateful to her for giving him the name, he put a hand on her arm impulsively.

She stopped surprised. "How strange you are. Your voice was soft then. Come, Louis," she drew him into a deserted anteroom, "while you're in this mood, I'll work my wiles on you."

In the shadowed room she turned to him, raising her face as if she expected to be kissed. Willingly he obliged, feeling the soft warmth of her lips against his half-exultingly, half-despairing. Her kiss was meant for a man he hated, hated even more now for possessing the soft beauty that was Claire.

She drew away suddenly, looking up startled into his eyes. "I said I wouldn't see you again until you had decided to do as I asked. Yet I practically asked you to kiss me just now. I suppose I forgot because the scratch—" she paused abruptly. "It healed very quickly, didn't it, Louis?"

"I know more than one secret," he returned.

"I'm sorry I had to do it, but you angered me, making love while millions are dying because of you, not moving a finger to save them."

Pyrh sighed. She was right. The process *must* be revealed. "Your kiss was not wasted, my dear," he said quietly, "I have decided to do as you wish."

"Oh, Louis!" With a half-sob, she clung to him; his arms closed about her. After a moment, she regained her composure and drew away. "I must go now. The Secretary to the Convention of American Scientists can't spend her time in a dark room

making love. But please wait for me afterwards to take me home."

He watched her retreating figure, again experiencing that surge of jealousy for Demuth.

As the days drew on, he saw more and more of Claire. The jealousy became almost a part of him. Different as he and Demuth were in everything but physical, bodily appearance, it was ironic that this girl should appeal to them both so strongly—ironic and tragic! For Louis Demuth was the man she had become engaged to, the man she loved. It was impossible for a man from the past to step into a world which held no place for him and marry a girl well established and already betrothed.

By sly leading questions, Pyrh learned details of the agreement Demuth had made with the scientists. On the last day of the Convention, if he decided to reveal the source of the Neo-hormone serum, he would appear at the final meeting and announce his decision to the world. If he did not appear, they were to know he had decided, irrevocably, to keep the secret to himself. Claire had promised Pyrh to say nothing of the promise he had made her in the dark ante-room after her kiss.

THE seventh day found Pyrh waiting tensely in the same ante-room, scanning each person who passed into the large assembly hall for a replica of himself. If Demuth appeared, he had decided to vanish, to lose himself, to get as far away from New York and Claire as possible. But days ago he had determined that Demuth must have every opportunity of making his own generous gesture, that he would not take his place in the hall until the final moment, when he was sure Demuth was not coming.

The final moment came, and passed. Still Pyrh waited, fearing his jealous hatred of the man might cause him to act too precipitately and so take

the moment of grandeur from Demuth.

Through the open door, he could hear that the assemblage was becoming restless. Speakers failed to hold their attention. There was a nervous tension in the air. The last speaker closed his speech abruptly and the room was quiet.

The meeting was already on the air. Pyrh heard the chairman's voice begging indulgence of the outside audience . . . filling the gap with words so that even at this late moment if Demuth appeared he might speak to the country at large.

Drawing a deep breath, Pyrh left the ante-room and entered the hall. There was a heavy silence as heads turned. Then faces lightened, hands reached to pat him on the back, men laughed, a cheer rose! Professor Carradine stepped to the microphone.

Far down the room Pyrh saw Claire, her eyes fastened glisteningly on him, her mouth twitching in a faint, half-tearful smile.

He mounted the platform, approached the microphone and television, Professor Carradine's words echoing dully in his ears. Then, Carradine's introduction finished, Pyrh took his place.

"Fellow Americans . . . the derivation of the Neo-hormone will be made public . . . Tomorrow at a meeting of representative physicians and scientists. . . ."

AT last he got away from the happy, congratulating, laughing crowd and was alone with Claire, following her through a dark hallway to a side door which led by elevator directly from the speaker's platform of the Assembly Hall.

Before opening the door, he folded her hungrily in his arms, thinking it might be for the last time. After tomorrow, the need for posing as Demuth would be over. For the moment, however, he felt she was all his, felt that the man Demuth was the impostor and he, Lans Pyrh, the one

Claire's embrace was meant for. Then realizing this was self-delusion, he kissed her gently and opened the door to leave.

As his foot touched the last step, three dark forms hurtled themselves from the night upon him. His arms were grasped tightly, his mouth covered. He was being dragged toward the open door of a car. Behind him, Claire screamed.

Thinking her in danger, Pyrh summoned all his strength, but three men were too much for him. With one last effort, he kicked back forcibly, his foot finding a mark in the shin of the man behind him. Cursing, the man staggered, releasing his grasp on Pyrh's arm.

Seeing an opening, Claire attacked the off-guard man, scratching and kicking so fiercely that he had no chance of escape.

With his free arm as a balance, Pyrh found it possible to use the old defensive art of Tera. Tensing his muscles, he lifted one of his assailants from the ground, flipping him backwards, his head landing with a thud on the sidewalk.

In the next moment, however, the other man aimed a heavy blow at his eye, splitting the skin and sending a stream of blood down his face. Pyrh retaliated with an uppercut to the other's chin. The man staggered, but regained balance. Before Pyrh could strike again, a crushing blow hit his head. Fleeting, he saw Claire struggling to free herself from the grasp of one of the thugs, before his mind went black.

Shoving his body quickly into the car, the three men drove away, leaving Claire standing helplessly alone on the dark side street.

As she started for help, only a moment after the car had rounded the corner, a figure came hurrying down the block. She stared unbelievably as it neared. Only a moment before she had seen this man carried away unconscious in a car. Yet here he was already returned, slightly ex-

cited, but perfectly groomed with not a trace of blood on his face, not a sign to show the struggle in which he had just taken part.

"How did you escape so quickly?" she asked breathlessly. "What of your wounds?"

For a moment Demuth looked puzzled. "Escape?" he repeated softly.

"From the kidnapers," she said impatiently. "What's the matter with you, Louis? Don't you remember?"

Slowly a smile of understanding and relief crept over Demuth's face. His double had been disposed of, for a while at least.

"You're mistaken, Claire," he said emphatically, "there were no kidnapers. You must have been dreaming."

As in a daze, she peered up at him, seeing the skin on his face smooth, clean and unbroken—save for one already half-healed scratch. Then passing a hand over her bemused forehead, she sighed deeply and meekly allowed him to put her into a taxi and take her home.

CHAPTER IV

WHO IS DEMUTH?

LANS PYRH came to consciousness with the feeling of eyes on him. A dark, thick-set man sat across the room smoking impassively. The man surveyed him a full minute before he spoke.

"I'm Pizarro." The voice was suave, cultured, calm. "Sorry the boys mussed you up. How do you feel?"

"Bad." Pyrh spoke dully from the ache in his head; then suddenly remembering, sat upright on the bed. "What of the girl? What did they do to her?"

"Nothing at all. Don't worry about her, Demuth. You've more important business to occupy your mind now."

Demuth! So Pizarro had kidnaped him thinking he was Louis Demuth. The whole thing became more muddled and confused in Pyrh's mind.

His first thought had been that Demuth himself, angry at Pyrh's taking his place at the Convention, had taken this means to get him out of the way. But now. . . .

Pisarro's voice cut into his thoughts. " . . . I won't waste words. Here's the set-up. You keep me supplied with the Neo-hormone serum—adequately supplied," he grimaced "and I furnish you with food and lodging for the rest of your natural life."

"What's it all about?" Pyrh asked irritably, swinging his feet to the floor and rising. "If your men hadn't brought me here, you and the rest of America would be receiving adequate treatment for radium poisoning within a few days. I had just finished a broadcast in which I promised to make the process public tomorrow when your thug friends attacked me."

"That's just the trouble." Pisarro smiled slowly. "I don't want the process known. I want to have my own little Neo-hormone factory, with you in command, to produce and sell all that's used. You had your day in the sun; now it's time for mine." He stretched lazily. "It's my last fling at a million."

"And if I refuse?"

"You won't—for long. I'm sure the boys can convince you."

"I do refuse," Pyrh answered stubbornly. "Treatment for radium poisoning must be made available to everyone—rich and poor. Once you put a premium on the serum, clinics will be forced to charge for treatments; those who can't pay won't have a chance of being cured. I said I was making the derivation public—and I am. Nothing you can do will stop me!"

"Quite a change, isn't it?" Pisarro asked softly. "All at once you have an overwhelming desire to be the savior of America, but only a few days ago the odds were ten to one against your making the process public. I've got my own ideas as to what you were

holding out for, too. You see, I know about those shipments you made Musler. But don't worry, I won't give you away. I've more important things to do with you than have you locked up for treason."

Pyrh flushed, parrying for time. "Our motives seem to be equally vicious."

"Equally, Hell! Compared to you I'm a Good Samaritan. All I want is the money, and I'm not letting people die while I make it."

"You're not making it," Pyrh said stubbornly. "I refuse to manufacture the serum."

"O.K." Shrugging, Pisarro opened the door. "Come on in, boys."

Pyrh coolly surveyed the three men who entered, noting their brawny muscles, the hard, pitiless smirks on their faces.

"Won't he give in, boss?" one asked. "Want us to work him over?"

"What do you say, Demuth?"

"No!" The word came emphatically.

Pisarro waved his hand and turned aside.

All together the three approached, stretching out hairy hands to bat Pyrh's head. Tensing his arm, Pyrh sent one hurtling against the wall. The ancient art of Tera must serve him well now, outnumbered as he was.

Another man was sent thudding to the floor, but the first was back, and he, with the man who had not yet been touched, covered Pyrh's body with hard, flailing blows, thumping the air from his belly, pounding his head mercilessly.

If he could only get one opening. Ah, there it was! With a swift upercut, Pyrh sent one of his assailants spinning senseless to the floor.

From the doorway Pisarro applauded. "Good fight, Demuth. Better than I expected from you. Give up yet?"

"Not a chance!"

The ceaseless, battering attack was beginning to tell on Pyrh, however. His cheeks ran with blood, his head

was sore and aching from the blows which had been rained on it. Yet still he fought on, landing a telling blow when the opening presented, throwing a man heavily to the floor when he could use his arms freely.

At last a blow to his head blacked out consciousness. As his eyes closed, he heard Pissarro's angry voice berating the men for putting him under. Then he knew no more.

He returned to consciousness to find his wounds dressed and Pissarro again eyeing him from a corner of the room.

"Look at it this way, Demuth," he began with no preamble. "The boys and I are in a spot now; kidnaping's a Federal offense. So no matter what you decide, you're here for the rest of your life. We can't set you free to have you put a finger on us. Of course," he smiled grimly, "we aren't going to support you for long if you're not productive. Your life expectancy depends on you from here on."

Pyrh shook his head. "You're just wasting time, Pissarro. I won't help you line your pockets by selling something which should be free."

"All right." The man rose. "Only when you're with the angels, who's going to save the world? You're not going to do much good to people suffering from radium poisoning when you're dead, and the secret with you!"

For a moment Pyrh thought furiously, weighing logic, reason, altruism, against his objection to being held captive, to being forced to do something against his principles.

"A certain number of people will be cured my way, at least," Pissarro continued. "If you still insist on putting on a big-hearted act, think of that. But if you've made up your mind," he sauntered carelessly to the door, "I'll tell the boys."

"You win." Pyrh ran a hand over his forehead, closing his eyes with the effort of thinking above the pounding in his head. "Have you a laboratory?"

"The best equipment we could buy. We were sure you'd see it our way."

"I'll begin tomorrow." Turning his face to the wall, Pyrh closed his eyes.

Pissarro had not exaggerated; the laboratory was fully equipped, even to a supply of free radium. Despite Pyrh's captivity, he gleaned a certain satisfaction from finding himself once more surrounded by the trappings of science. He almost succeeded in forgetting Demuth and Claire, though sometimes the thought of her frail beauty, the memory of her soft lips, made his mind strain at the shackles which held him prisoner. If he were only free . . . free to go to her as Lans Pyrh—not as Demuth.

At Pyrh's request, Pissarro brought in hundreds of guinea pigs, young ones—as the Thymus gland, from which the Neo-hormone was extracted, shriveled in older animals as it did in humans.

It took some days to infect the animals with radium poisoning. Pyrh chafed at the delay. Now that he was actually at work, he wished to release as much of the serum as possible, both to relieve suffering and . . . But he hardly dared think of that.

At last the first batch of animals showed sufficient signs of the disease. Eagerly Pyrh took their Thymus glands, removing from the cells the chemical substance they secreted.

A simple operation, he reflected. Strange that all the scientists of the present world had not been able to discover it despite their frenzied efforts and the dire need for it. In Tera it had been as primary as deriving adrenalin from the Adrenal glands, or insulin from the Pancreas. The Neo-hormone bore as direct a relation to the Thymus as the well-known, commercially-used hormones bore to the glands from which they came. But as the Thymus gland had shriveled in man of the modern world because the disease for which it furnished the

antidote had been so long unknown, scientists did not take it into their calculations. In Tera radium poisoning had been common; therefore men's Thymus glands had been large and the hormone known. Now, in 1985, the disease was comparatively new, and scientists, except for Louis Demuth, were still searching a cure.

Within a week, the first supply of Neo-hormone serum went out. Pyrh settled down to steady work—and waiting.

Though he was held prisoner, he was treated well, allowed the run of the house, which proved to be a farm far from the main highway, and furnished with books and a radio. The day after he had been kidnapped, he listened to a newscast, learning to his wry amusement that Louis Demuth had appeared at the meeting of scientists at which Pyrh had arranged to reveal the process, but had steadfastly refused to make any statement save that he had changed his mind.

The country was agog with indignation. The press lashed at Demuth, the Government threatened; radio commentators spoke of him in blistering terms. Yet still he was silent, neither explaining why he had offered to reveal the secret and then retracted, nor mentioning the existence of his double.

Lans Pyrh worked, waited and wondered — wondered two things: what Claire's reaction had been to Demuth's refusal to reveal the secret, and how long it would take for Demuth to find out that Neo-hormone serum, of which he alone knew the source, was being released.

One day as he stood by the laboratory window, a car drove up the long, deserted road from the main highway and turned in at the gate. A man and a girl got out: Demuth and Claire!

At last they had come; Pyrh's logic had borne fruit, for he had acceded to Pissarro's demand only because reason told him that once Demuth learned that certain clinics were be-

ing supplied with serum, he would trace the serum to its source. In that lay Pyrh's only hope of rescue. Now he walked from the laboratory, anxious to watch Pissarro's face at first sight of Demuth. The bell rang.

Pissarro was already at the door, shielding himself behind it with leveled gun. For a full moment he stared amazed at Demuth's face, then quickly lunged, grabbing his arm and pulling him forcibly into the house.

"How did you get out?" His voice was half angry, half perplexed. "I thought you were working."

At Demuth's silence he continued, even more bewildered, "And why in the Devil did you come back, once you were out?"

Claire had followed the two men inside. Pyrh slipped behind the door of the laboratory, diverted by Pissarro's astonishment.

"I came to find out about the Neo-hormone serum which is being put on the market," Demuth began, looking about the room condescendingly.

"Quit stalling." Still keeping firm hold on Demuth's arm, Pissarro took him into the laboratory. "I'll see that you don't escape again. And now that you're here, lady," he turned to Claire, "you'll have to stay too."

Pyrh smiled at Claire before letting his eyes rest speculatively on the two men.

Demuth stepped forward, gazing with new disbelief at what might be a mirror image of himself. "Who are you anyway?" he asked angrily.

Pyrh rose. "I am Louis Demuth."

"You lie! I am Louis Demuth."

"Well," Pyrh shrugged, enjoying the whole scene hugely, "then we are both Louis Demuth."

"This is no time for humor." Demuth advanced menacingly. "You have taken advantage of your resemblance to me once too often first when you took my place at the Convention and promised to reveal my process, and now by producing the Neo-hormone and selling it for your own gain. I wish neither the process made

public, nor the serum to be produced. For that reason, I went to some trouble to follow distribution of it through many ramifications, to arrive here. I don't know how you came into possession of my secret, but I demand that you stop producing Neo-hormone serum immediately!"

"I refuse," Pyrh said quietly. "You have no right to ask it."

"If I haven't, who has?" Demuth shouted. "I discovered it, I own it. I am Demuth!"

PISARRO stepped forward, his voice rough to cover his perplexity. "One of you is lying. Which is it?"

"He is," both answered.

Claire giggled.

Pisarro turned to ask wearily, "Well, who are you? Don't tell me you're Demuth too?"

"No," she answered, "but I'm engaged to him—them."

"Then you ought to know the real one. Tell me, which is Demuth?"

Claire paused, letting her eyes travel to the twin faces identical in every detail. Now that the two were together, the absolute facsimile one had of the other struck with full force. There was not one hair's-breadth of difference in their appearance; their faces and bodies could have been superimposed, one upon the other, with perfect coincidence.

Both Pyrh and Demuth stared at her penetratingly, as if each sought by force of his eyes to make her answer as she wished. She lowered her lids, sighed, and countered with a question.

"What will happen to the one who is not Demuth?"

"No one will ever know." With a gesture, Pisarro made his meaning unmistakable. "And you'll disappear with him, so you might as well tell the truth. We can't have two eye witnesses to a kidnapping running around loose. Come on, out with it. Which is Demuth?"

Slowly she raised her eyes to

Pyrh's, walking over slowly to put her arm through his. "This is the real Demuth," she said softly.

"Claire!" Demuth cried in a frenzy. "Don't joke? This is serious. You know he's an imposter."

"He is Louis Demuth," she repeated, avoiding Demuth's eyes.

"Can you prove it?" Pisarro peered at her sharply.

"Of course." She walked over to a laboratory table which stood beside the window. "The serum you have been marketing for the past few weeks proved effective. It is the correct one. Only one man in the world knows how to produce the Neo-hormone—the man you have been holding captive—this man—Louis Demuth!"

Demuth's voice rose hysterically. "She lies! I can produce it too. Give me a chance to show you."

Pisarro scanned his fear-stricken face closely, then shook his head. "No. I know she's right now, though I can't understand how you managed to get yourself up to look so much like him."

"How do you know now?" Demuth quavered.

"I don't believe the man who ruthlessly withheld such a secret," Pisarro said slowly, "would have your streak of yellow down his back. Come outside now," he leveled his gun, "and bring the lady. From here on it's up to the boys."

Pyrh had been listening only vaguely half his mind ceaselessly searching a way to save Demuth and Claire, the other half remembering words spoken long ago. As in a dream he stood again on the shores of Amaris, hearing old Pater Cocles' voice . . . *he will act and react differently from you. . .*

So it was that he anticipated Demuth's next move: the frenzied desire to save his own skin at the risk of Claire's, the selfish, trapped-animal reaction.

Crossing before Claire, Demuth lunged for the window, not stopping to consider that a shot meant for him might find its mark in her body.

Simultaneously, Pyrh drew Claire out of the line of fire at the moment Pisarro's shot reached Demuth's back. Twirling at the shock of its impact, his eyes glazed with fear, Demuth sank to the floor.

After the ear-splitting blast, the room was still, save for Demuth's labored breathing. Lans Pyrh and Claire stood helpless as his breath died to nothing.

It was Pyrh who first broke the silence. Turning to Pisarro, he said, "Put one more notch on your gun, gangster. The day of reckoning isn't far off now."

"I'll worry about it when it gets here."

"Start worrying, then." Pyrh smiled and walked to the laboratory table, sweeping its top clear of everything on it, leaving a useless mass of broken glass on the floor.

"Are you crazy?" Pisarro swung him around angrily. "What did you do that for?"

"Just to make sure," Pyrh answered. "You see, I'm not going to produce any more Neo-hormone for you, Pisarro. I'm going back to New York and reveal the process as I promised. And you won't stop me!" He smiled into the barrel of the leveled gun.

"I won't?" Pisarro's finger tightened on the trigger.

"No," Pyrh smiled again disarmingly, "because you see you're infected with radium poisoning, Pisarro. One by one, I coated the filaments of all the light bulbs in the house—except in this room—with radium. You've been exposed to a battery of intensive rays for weeks, and now you're showing the first symptoms. That greenish tinge. . ."

Pisarro's gun-hand trembled.

"That lack of muscular control," Pyrh continued. "And once started the disease is impossible to stop, unless you have treatment. So," he finished calmly, "you'll have to let me

go. If the clinics run out of Neo-hormone serum, you'll have no place to go to arrest its progress."

"It's a lie!" Pisarro's voice rose hysterically.

"No, it's no lie. Feel that scar on your cheek. Deeper, isn't it? That comes from losing weight, one of the first symp—"

"Give me something, then," Pisarro screamed. "Give me an injection! Make more serum, quick!" His eyes wavered toward the jumbled mass of glass on the laboratory floor.

"That takes time," Pyrh said calmly. "However," he withdrew the vial of drug Pater Cocles had given him when he left Tera from his pocket, the drug which had kept his own life suspended over a million years, and raised it high above his head, "I have a small amount left. Drop your gun to the floor, Pisarro, or I'll destroy this last bottle."

For long moments, Pyrh waited tensely. Had he found the one thing Pisarro feared? Would his scheme work? *Would it?*

THE gangster's hand trembled, then slowly lowered. The gun fell clattering to the floor.

Retrieving it, Pyrh handed it to Claire, and walked toward the fear-stricken man. Taking only the fraction of a drop of the drug into the needle, he injected it into Pisarro's bared arm.

"The first treatment," he said reassuringly. "Within a few weeks you can get another—in a free clinic!"

Hardly had he finished speaking when the first glaze appeared in Pisarro's eyes. In another moment he sank limply to the floor.

Guarding Claire closely, Pyrh made his way to the door. The guard was dozing but awakened at the sound of his step. Before his sleep-stiffened fingers could clutch the gun, Pyrh hit his head a heavy blow with the butt of his gun. To make doubly sure of the man's continued uncon-

sciousness, he injected a small amount of the animation-suspending drug into a vein.

There was nothing to stop them now. Pizarro had depended on only one guard, all windows and doors of the house having been securely barred. Quickly they ran down the path and got into the car.

Claire did not speak until they had driven far from the house. Then, raising her head from its resting place on Pyrh's shoulder, she asked, "Was it true about Pizarro—the radium poisoning, I mean?"

"No." He smiled grimly. "Though I wish it were. I took a long chance that he'd believe me."

There was another moment of silence.

"Poor Louis," Clair said, "though I suppose he deserved what he got."

"Louis?" Pyrh turned to her, startled. "Have you known all the time that he was Demuth?"

"Of course."

"But how? And why did you—"

"The night before I met you at the Convention," she interrupted, "I scratched Louis' face when he kissed me after telling me he had decided to keep the secret of the Neo-hormone serum to himself. I scratched it deeply, but the next day there wasn't the faintest mark on your face. That was the first thing that roused my suspicion. Then when Louis came running up directly after you had been kidnapped—"

"I see." That was one thing old Pater Cocles had failed to take into account: that scars and injuries acquired after birth might so change a duplicate as to make him unrecognizable, even though the original

atomic pattern had been identical. "Why did you lie to Pizarro then?"

She looked up provocatively. "Don't you know? But," she paused and her face sobered, "one thing still bothers me. How did *you* know how to produce the serum?"

"Where I came from," he said softly, "it was primary. Everyone knew it."

There was a tense silence. "Where did you come from?" Her voice was awed, fearful. "And why do you look so much like Louis Demuth?"

He stopped the car, putting an arm about her shoulders to draw her close. "Guess," he said. "I'll give you three guesses."

"You might be a twin brother," she essayed, "but I know Louis had no brothers. Or," she paused, "your resemblance to him might be purely coincidental, though that doesn't seem believable either. As to where you came from," she continued, "the most impossible things are the only ones I can think of. You're strange somehow, different from us, more advanced in science—your knowledge of Louis' secret proves that. Maybe you're from another planet, or—" she added playfully, "a man from the future."

"Are there any more possibilities?"

"None," she answered definitely. "I'm sure of that."

"How sure?"

"I'd stake my life on it."

"That's what I want, Claire." He tilted her face up to his. "If the truth is a possibility you've missed; will you marry me?"

She nodded, smiling.

That was enough for the moment. He kissed her confidently.

**Read the Companion Magazines
To "SCIENCE FICTION QUARTERLY"**

THEY ARE:

**SCIENCE FICTION — AND
FUTURE FICTION — ON ALL
NEWSSTANDS**

The Wall of Water

By RAYMOND Z. GALLUN

Ruzza was not of this Earth—in fact, the mere sight of his distorted body would frighten most people—but he had courage and valor that would put most Earthmen to shame. For it was Ruzza who risked his life when the great Wall of Water was about to come down upon his Earthman pal, and all his years of toil!



Landing on some of its thorny, delicate prongs, it stung brutally.

RAFF ORETHON burst into his disordered apartment. "Ruzza!" he called in a low, tense tone. "Ruzza! The whole sea-bottom

project's gone haywire! Sometimes I wonder whether Nowlan is on the level. Anyway, for some reason, the Atlantic Basin Repellers are breaking

down! The gravity beams, holding the water back, are promising to quit any time, now. Ruzza! Where the devil are you?"

As Raff Orethon, recently a Space Patrol man, and now on Earth as chief promoter of a huge and radically new ocean-bed reclamation project, looked around the room with grim, strained eyes, the papers on the cluttered table stirred. But it wasn't clear yet who or what it might be that he had addressed by the odd name of Ruzza.

A rack of test-tubes on the table tipped over, spilling corrosive fluids on the rug. But the heaped up maps and charts and opened encyclopedias continued to rattle, as though a large rodent were buried among them, trying to escape. A small, brownish tentacle, like old wood, thrust its way up through the litter—then another and another and another, four in all. At the thickened tip of each was a bright, beady eye; intelligent, inquisitive, and annoyed, swaying now, like the head of a cobra.

Ruzza, native of the hot caverns beneath the frozen surface and chaotic and utterly frigid atmosphere of the planet Uranus, emerged at last from the turmoil of his terrestrial researches. He was far indeed from human in form, but who will say that this must deny him the faculties of brain and reasoning?

And on the under surface of his three-pound, oval body, there was a natural tympanic membrane, which, by its vibration, could mimic almost any sound. Besides, Ruzza had studied his English well.

"What of it, you dope?" he buzzed angrily. "If you can't take care of your own affairs properly when I'm just as busy as hell trying to figure out where lightning bugs—"

But Raff Orethon, who knew Ruzza well, by reason of a long association with the tiny Uranian monster when they both were members of the Space Patrol, interrupted shamelessly:

"I've got to go out there over the Atlantic right away, Ruzza. See what

I can do to fix things up. If I don't succeed, you're sunk! You hold the fort—here. I'm counting on you—dead-seriously, Ruzza! Don't let anybody get at my models or papers or anything! Now remember!"

By then, Raff Orethon, having changed his hat for a flying helmet, was dashing out of the doorway again. The panel slammed behind him with a resounding report.

And Ruzza was left to stare at the door, speechless and frustrated, his quadruple set of stalked orbs wobbling in plain evidence of confusion, anger, and chagrin. He crept to the edge of the table, buzzing and grumbling in his native language. The brown prongs that covered his ovoid form bristled and relaxed nervously as, with some of them, he clutched and unclutched at his perch.

EARTH was a madhouse, Ruzza concluded for the millionth time. Oh, in numerous respects it was a swell place, all right; but just when one got good and interested in something, something else turned up to spoil all one's efforts! Ruzza had been busy here with his research work, writing in strange characters with an inked stylus, a long account of Earthly surroundings, customs and sciences—for the benefit of his own people back on Uranus. And now that his train of thought was interrupted, he was as sore as any old college professor whose pet experiment has been monkeyed with by little Johnny.

"Doggonit!" he blazed furiously. "Hang that dope, Orethon! Darn his hide, anyway! Skree! Zah! Ruhaah!"

Thus, in sizzling expletives, expressed in two widely different languages, Ruzza of Uranus wasted several minutes. Over the great apartment building, he heard the receding drone of Raff Orethon's flier. Then a similar drone—approaching—settling to silence.

Soon there were other sounds—heavy footfalls in the corridor—rough voices speaking—then a loud knock at

the door. Quite humanly, in spite of his unhuman shape, Ruzza's anger began to fade. What Raff had said had indicated plainly that there might be visitors with anything but friendly intentions. In fact, realizing that he, personally, was now doubtlessly getting into hot water, Ruzza began to kind of shrink up inside. Ruzza was scared, and for a moment he suffered a severe impulse to bounce off the table and roll his burdock-burr body under the day-bed, seeking the dubious concealment of a far-dark corner.

But dignity won the first round. This was no way for a gentleman of courage and pride and intelligence to act, concluded Ruzza. What would Raff think, if he ever found out? Ruzza decided that he must hold his ground. He'd been a sap not to find his little proton blast tube. Then, as in other dangerous circumstances during his commendable service with the Space Patrol, he would have had a much better chance.

"Whoever's there, open this door, and be quick about it!" somebody was growling determinedly from the other side of the panel.

Ruzza's prongs wilted, trembled, then bristled again. If his weird Uranian body had been capable of a cold sweat, he would have been dripping. But he waited silently, grumbling angrily inside over spilled milk. He hadn't hidden Raff's papers in a place harder to find than the wall safe. Raff, pressed by more important things, evidently hadn't had time to do so himself!

Nervously, his eerie eyes bobbing, Ruzza looked around the room. A grotesque fish of the Atlantic depths stared back at him from a specially designed pressure aquarium, and wriggled its phosphorescent flanks in what seemed a plain gesture of disgust to Ruzza—disgust directed at himself.

On a small enameled stand nearby was a wheel-like working model of the Atlantic Basin Repeller. The latter was Raff's development of the new

Halverson invention intended primarily to levitate and propel space-ships—the artificially created gravity beam, commonly operated in reverse—for repulsion rather than for attraction. Such beams, shooting out radially from a great machine, had cleared a twenty-five mile circle at the center of the Atlantic, sweeping the deep ocean water back, and leaving the bottom exposed as dry land—yes, dry land; yet impregnated with all the rich metals that immeasurable ages of sea erosion had swept down to the bottom of that exposed pocket on the ocean floor.

And Ruzza suddenly realized the importance of it all. This was Raff's idea—Raff's invention. Raff had worked hard to make it amount to something. And now somebody was trying to spoil the whole business!

Ruzza had one chance, now—just one. That he was so unprepared was his own fault, but he had to make the best of it. The knocking at the door didn't continue for long. Very soon a proton blast was applied quietly to the lock. It, and part of the surrounding wood, dissolved in a puff of fire.

The tiny Uranian found himself confronted by one of the fiercest-looking men he had ever seen—a huge fellow with a low, crinkled forehead, a great, out-thrust jaw, and eyes that were little and red and very close together. Behind him was a lesser individual. But both looked plenty dangerous—especially to Ruzza, for from his Uranian viewpoint all human beings were monstrous.

Completely at a disadvantage otherwise, Ruzza proceeded to look fiercer and dangerous himself. All his hundreds of body prongs stood out like the fur of a scared and angry cat. His eye tentacles bobbed and swayed back and forth menacingly. He drew air into his complicated lungs, to swell his small, hideous form to as large a size as he could. His voice tympanum buzzed a steady hum of animal menace. He looked like a huge, brown pin cushion, animated and sizzling, and

ready to explode. Seeing him that way, and the unearthliness he represented, most anyone would have turned tail and run.

THE hulking man's eyes blinked in nervous consternation, then narrowed again as he recovered himself.

"Well," he drawled satanically. "Look what good old Raff Orethon left to keep us company, Nick! Gosh, where did he get it? I did hear he had some kind of a smart Uranian monkey with him. But this is evidently some low form of animal—not the notorious Ruzza of Uranus!"

"Let's squash the thing, George!" said the other, smaller fellow, grinning evilly.

"That's just what I'm gonna do, Nick," returned the big man in a similar tone. "Raff ought to know better than to keep such an unpleasant pet around—scaring people!"

Before Ruzza could think through the network of sinister kidding he'd been subjected to—before he could get things quite straight, and speak and act accordingly, the gigantic George had seized the poker from the fireplace, and had swung with it—hard—as if to squelch a common snake.

Ruzza rolled his oval body just in time to miss the major force of the blow. But landing on some of his horny, delicate prongs, it stung brutally. Amid a torrent of his research papers, amid fierce waves of hurt pride, outraged dignity, and black anger, Ruzza tumbled to the floor, squeaking in pain. He had sense enough, though, to roll under the bed at last, escaping the fury of the pursuing George.

There his mind worked quickly, pushed by the simple force of self-preservation. At the farther wall, near the foot of the bed, he found the long drape of a window curtain. Using his tactile prongs, he climbed the latter at top speed. Surprise, here, was in his favor; so the tiny Space Patrol man, who was not a man at all, was

able to escape somewhat ignobly from the opened top of the window.

Beyond this point, far better than human climbing capacities aided him immeasurably. Clutching at the bricks with the suckered tips of his prongs, he crawled like a fly to the roof parapet immediately above. There he perched, panting and sputtering. Low form of animal, was he? Uranian monkey, eh? He'd show those two gobs of filth who was who and what was what! But right now, how this was to be done, he didn't quite know.

He listened carefully to the sounds issuing from the window from which he had just escaped with his life, his fine, auditory filaments sharply tensed.

"Got away—the little devil!" big George was growling angrily. "The boss is gonna be sore."

"Can't worry about that now," Nick returned. "Got to get hold of Orethon's papers, and take pictures of the insides of his model, here, like Nowlan said—then beat it, quick. The sabotage—the punctures in those feed-lines of the repellers—must be having a very good effect out there in Ocean Valley by now . . ."

Ruzza listened some more, intently. His auditory filaments picked up the clink of tools working on the wall safe, and on the small original of Raff's gigantic atom-powered gravity machine. Then camera flashbulbs flickered.

Ruzza wondered for a moment what it was all about; but it didn't take much wondering to catch on. Raff Orethon had had a scheme to reclaim a bit of the ocean bed—to get at those rich metals lodged by erosion in a pocket at its bottom. But he'd needed capital to back the project. So, to raise the money, he'd had to make his backer a half-interest partner. Now that the deposits there in Ocean Valley—that great, dry hollow in the Atlantic, dyked by beams of reversed gravity—had proved far richer than had been expected, somebody was sore. Somebody was trying to get full control—

not just half-interest! To accomplish that, all Raff's work out there in Ocean Valley had to be wrecked—leaving him penniless and helpless, if not actually drowned—an easy prey to lawsuit. But the guilty one wanted to know every part of his invention, so a new start could be made without any trouble. It was all carefully planned to meet any contingency. Probably by some dirty trick or another, full legal control of the patent rights could be obtained later. And of course it was best to steal Raff's contract, too!

"Nowlan is crooked!" Ruzza squeaked to himself. "Just as Raff suspected!"

THE tiny Uranian was intensely ready to respond to the call of loyalty and duty now. Raff and he got mad at each other every so often, but whose business was that except their own? Ruzza's many fine body muscles tautened. Raff was his pal—the guy who'd introduced him to space-travel long ago—carrying him around in a fibrotex pouch on his space-suit—as he went about his patrol duties. They'd had some swell adventures together. And here on Earth, Raff had let him mess up his beautiful apartment with a lot of silly researches!

Ruzza scrambled over the parapet into the wide roof-garden beyond. From the concealment of a small flowering bush, he saw what he expected to see there—a new, terrifically powerful flier at rest—a flier driven not by the old-fashioned rockets, but by beams of reversed gravity. By obvious association with the two plug-uglies in the apartment below, the craft must belong to the enemy.

Ruzza's reasoning powers, at least as quick and clear as those of any high-calibre human being, leaped to a swift conclusion. His best advantage was to get himself concealed inside that ship, so that he would go wherever it would go, presently.

Employing his usual method of locomotion when he desired to move quickly—rolling along like a ball—

he hurried across the garden, behind the concealment of a low hedge. Earthly insects and plants, which recently had fascinated him, held no attraction for him at this moment, as he doubled back, approaching the flier from the rear, so that whoever had been left to guard it would not see him.

Near the great tellurium capped rods at the craft's stern—the projectors of driving gravitational force—there was a tiny airtight port, designed for the purpose of inspecting otherwise concealed structural and mechanical elements within. Ruzza turned the latch with his tendrils, opening the port.

The latter was very small, but Ruzza's body, used to clambering through rock crevices in his native Uranian caverns, had no difficulty in squeezing through, almost in amoebal fashion. He closed the port behind him. Now, clinging to the internal brace-work of the craft, he waited, wondering what he should do next.

Very soon he heard voices; but he didn't learn what was being said, for the generators of the ship were started immediately, and their steady, preliminary growl, as they were warmed, drowned out most other sounds. Swiftly, thereafter, the ship left its landing place, and accelerated rapidly. Though Ruzza could not at the moment see outside, he knew that the craft was headed eastward, toward Raff Orethon's mysterious Atlantic Basin, or Ocean Valley, which would soon be covered by the waves again, defeating all Raff's hopes, unless something could be done to prevent it.

What that something might be, was completely beyond Ruzza right then; but he proceeded with his work methodically. Clambering about in the metal framework, between the inner and outer hulls of the flier, he located a small grilled ventilator opening.

Ruzza applied one of his stalked orbs to the latter, and peered through. Thus, looking forward, he could see

most of the cabin's interior. Big George was in the pilot seat, the control box before him. Nick was in the rear seat, but beside George was a third man whom Ruzza recognized at once—Frederick Nowlan, the banker, heavy jowled and paunchy. It *was* Nowlan, then—for sure!

Straining his auditory filaments to hear what lay behind Nowlan's sinister grins and frowns, Ruzza was able now, from his new point of vantage, to listen in on the banker's conversation, above the drone of the generators.

"Orethon's the kind of fool that'll stick it out in the Valley to the last, trying to fix the machinery," he was saying. "That's what I'm hoping for. If he drowns, we won't even have to fight him in court. I required him to make me his heir—patent rights and all. The people'll just think his machine was faulty and broke down; and we can start over again—with a clean slate. But with his contract and photographs of his model, we're doubly sure. All that money, boys! Gold, actinium, osmium, radioactive ore—and who knows what! All mine—boys! You'll get your cut, but no half-interest for me with Orethon!"

Ruzza was listening avidly, his prongs tautening with hate and contempt of this covetous and cruel little Earthman, Nowlan. But too keen an attention was Ruzza's undoing. The ship changed its course slightly and abruptly, giving a small, sharp lurch. Ruzza, usually so nimble, lost his balance on the girder rib to which he clung, and tumbled down between the double hull walls, making a loud, scratching noise, and a sibilant sigh as the air was knocked from his lungs.

Half stunned, he heard Nowlan say: "We seem to have company, boys! I'll bet a thousand dollars Orethon's Uranian ape sneaked aboard this ship! Glad he got away from you in the first place, George. Now we can catch him and have some fun with him, and then dump him in the ocean with Orethon! Nobody'll be any the wiser.

Let's get some of those wall plates off, Nick, and find the little devil!"

Ruzza was plenty experienced with his present playmates by now, to know when he was in a jam. But he arose to the occasion valiantly. Speedily, yet a little gingerly because of his bruises, he started forward between the double hulls, until he reached the dark space directly ahead of the control box of the flier. They wanted to have fun, eh? Well, why not? Ruzza, of Uranus, who was really a noted scientist in his own country, knew plenty about these new gravity-beam ships.

HE heard Nick and Nowlan pounding about, looking for him; but he was too mad and too gloating over his plan of retribution now, to care a bit. His quadruple set of stalked eyes, adjustable both to intense light and almost absolute darkness, because the radioactive phosphorescence of the caves of Uranus varied enormously, poked up through the opened back of the control box. Several horny tendrils followed. In the unmarked maze of wires and cam-joints and lever-systems within, they moved with perfect familiarity. A little cam was turned. In response the flier's nose tipped upward steeply. Then Ruzza jiggled a small rod. Speed suddenly became demoniac. Amid the howl of tortured atmosphere and straining generators, Ruzza heard the screeches of startled men, and the bumping of their bodies as they tumbled across the cabin.

Ruzza didn't give Nowlan and his aide, Nick, a chance to pick themselves up—no, not he! Next he guided the craft in a tight outside loop that burst even the huge George's safety strap and pitched him out of the pilot seat and resoundingly to the ceiling above, long before his startled faculties had enabled him to attempt any readjustment of the controls.

If Ruzza of Uranus could have grinned, he would have done so. But he did the next best thing—or maybe it was better. He gave a tinnny, titter-

ing imitation of a human laugh.

But in response he heard only choked, stunned sighs and gurgles. It was a nice, pleasant situation, in a way—but the major problem was not only still unsolved, but it looked unsolvable. Playing practical jokes on Nowlan and his men didn't help in saving Ocean Valley and Raff Orethon, his Earthman pal, from being engulfed by the Atlantic!

Feverishly, with a number of his free tentacles, Ruzza groped at the inside fastenings of another tiny inspection port nearby. As the minute door swung open, letting in light, air rushed out sibilantly, for the altitude attained by the screaming ship was already considerable, and the pressure of the air was low.

With one tentacular orb, Ruzza peered through the opening to get himself oriented, clinging for dear life to the control box to keep the acceleration from doing the same thing to him that it had done to his enemies.

Far below, under the afternoon sunshine, was the ocean. With another eye, still within the control box, Ruzza could see the phosphorescent markings of the compass dial, floating in fluid within its transparent case. From his curious point of vantage, impossible to a man, he worked the controls.

The ship leveled off, and at screaming speed, propelled and levitated by reversed gravity, hurtled eastward. Now and then Ruzza swerved the craft to jolt his recent playmates again, and keep them effectively out of action.

Thus, in a matter of minutes, Ruzza was flying low, and at much reduced velocity, over Ocean Valley. It was a strange, wonderful spectacle there—surrounded by towering walls of water, as high as high mountains, and kept back in apparent defiance to all natural laws. Above, the waves slapped as always, over the expanse of the ocean. Below there was a circular, indented area of blue clay, drying in the sun. Mining buildings and

workers' barracks dotted it, and grass was beginning to grow green on its floor.

But those gigantic walls of water had started to sag inward inexorably. The great wheel-like machine at the center of the valley—sending its fan-like, weakened beams of inverted gravitational force outward radially to hold the sea in check—was surrounded by a crew of men, trying grimly to repair the damage to the huge mechanism. Raff Orethon's picked crew would never quit.

The distance was too great for Ruzza to see Raff himself; but Ruzza knew he was there somewhere, directing operations bravely against what probably he did not even know for sure was sabotage. It wasn't a very pleasant set-up, as Ruzza could tell.

He heard a voice, now, speaking from the cabin of the flier. It was Nowlan's voice, hoarse with the grim certainty of fate. With one of his tentacular eyes, Ruzza peered beyond the glass front of the compass housing, and back into the ship's cabin. Nick and George were still stunned and inert, but Nowlan had raised himself on his elbows. Blood streamed down his pale, scared face, from a wound on his head.

"All right, you damned, crazy Uranian fiend!" he chirped. "Have your fun! You can never win! Play around all you want to—it's still my game! When Ocean Valley and Orethon are wiped out, what do you think you'll be able to do? Kill us? Try to take us to the police? If you've got any such ideas, you'd better forget them! I'm a well-known, respected man! And what are you? A hero of popular fancy, perhaps—but an alien who has engaged in criminal theft and assault!"

RUZZA had a quick comeback for what Nowlan said. It wasn't verbal. It was just another swift, jolting movement of the flier he was piloting so strangely. But after it was over, Nowlan was completely stunned once more.

Still, in his own aching nerves and brain, Ruzza was well aware that the banker had spoken the truth. Ruzza felt very small, mixed up with selfish human intrigue, even though as he had roamed the greater star trails. Unless he could save Ocean Valley from being covered once again by the sea, all was lost.

Ruzza peered through the external inspection port. The wall of the sea around Ocean Valley was moving inward very gradually—closing like a huge, deep mouth—as the repelling beams continued to weaken. If only some small, additional force could be applied to that water, helping a bit to hold it back, then probably Raff and his crew would have time to make repairs. There was a lot of power in Ruzza's ship, it was true; but how could it be used effectively over all that vast expanse of Ocean Valley?

It looked plenty hopeless. Ruzza's small form wilted in dejection. When a fly, which had somehow gotten between the double hulls of the craft, buzzed around Ruzza's body, he didn't even curse. But then, after a moment, the presence of that fly reminded him of something. Circular motion. And Ruzza thought of other things—water spiralling down the drain of an Earthly bathtub that had fascinated him, for one. . . .

Very suddenly, then, Ruzza was active once more. His craft shot above the watery lip of Ocean Valley. And he began to circle it at low speed and low altitude. Only one more than half of the gravity rods at the stern of the ship were set, for repulsion. The others, having been tilted downward by Ruzza's skillful manipulation of the controls from the rear of the control box, were now projecting normal gravitational force—unreversed. Set for attraction, they were tugging at the water—dragging it along, pulling part of it upward in great clouds of spray!

Round and round Ocean Valley Ruzza continued, and the water of the

sea directly beneath, began to follow the ship in its circular motion—turning, rotating like a gigantic whirlpool. Faster, faster, as momentum was gained.

The flier shuddered, as though it were being torn apart by conflicting forces—one dragging backward, the other stronger force driving it ahead. Ruzza didn't care. He didn't care about the thunderous vibration that numbed his muscles. He just kept at his task, tenaciously, creating a great whirlpool around the artificial Atlantic Basin. Was the great, belying wall of water holding its position now—ceasing to encroach further on the Valley?

Yes, it was! Centrifugal force was doing the trick—the powerful outward thrust of circular motion!—just enough force to aid the damaged repeller mechanism at the center of the Basin. Maybe now Raff could continue with his repairs successfully. Ruzza's strange mind soared at the thought, as he continued to pilot the craft madly, round and around, round and around. . . .

RUZZA had finished his great task successfully. He had landed in the Valley. Then, overcome by weariness, he had slept. Now, in the early morning, he squatted on the edge of an office desk. Outside of the Sheetiron Building, was that broad, bowl-like pocket that had once been covered by the deep sea. Mine shafts were being dug; refineries were being built, to purify the neglected treasures of the ocean.

"What did you do about Nowlan and his friends, Raff?" Ruzza buzzed to the young man who stood before him.

Raff Orethon shrugged, grinning. "You ought to know better than to ask that, Ruzza," he said. "You did about all that was necessary, yourself. They were out cold when you landed—all three of them. I had to get a bit rough with Nowlan, afterwards; but he spilled the whole beans about the sabotage—under a little pressure, and

in the presence of plenty of witnesses. In fact most of the workmen here wanted to lynch him. I guess he'll feel safer in jail...."

Ruzza's grotesque form swelled with pride and self-importance. His prongs bristled. His queer, tentacular optics swayed gleefully.

"It is good to be on Earth, Raff Orethon!" his tympanic voice membrane vibrated enthusiastically. "It is a wonderful place—of mystery, of advantage, of danger. . . I shall have much more, now, to write in my survey. . ."

Some of Ruzza's prongs clutched the desk's edge in the excess of his enthusiasm. But very suddenly he pulled several of them loose. Adhesive, entangling threads of a well known terrestrial substance, clung to them stickily.

Ruzza's body puffed up explosively, as he sought to disentangle himself. "Chewing gum!" he whirled in abysmal disgust. "Why don't you fire that damned secretary of yours, Raff Orethon!"

Raff Orethon burst into a loud guffaw.

IMPORTANT NOTICE!

THE SPRING EDITION OF

SCIENCE FICTION QUARTERLY

WILL BE ON SALE

MARCH 1st

AND WILL FEATURE A

BRAND NEW SUPER-NOVEL

BY THE FAMOUS

ED EARL REPP

—PLUS AMAZING SHORT STORIES OF UNUSUAL INTEREST
LOOK FOR IT

ON ALL NEWSSTANDS!

Artificial Universe

By JOHN COLERIDGE

*Two inquisitive physics professors dare to tamper with the very forces of existence—until tragedy strikes like the hand of an angry god crying,
“Stay within your barriers!”*

AN invisible beam of transverse, polarized waves—never before known to man—rolled from the octagonal cathode of the tube. Six feet away the target plate of copper, coated with colloidal selenium, became surrounded with a ghostly phosphorescence, as the superlightning forces impinged on it. The cathode grew brighter and an inverted image of it appeared on the target plate.

Then suddenly, the target vanished! And with it most of the three-foot length of the wooden pedestal on which it had reposed.

The two men stared at one another in bewilderment.

“Prob-probably vaporized,” stammered Peter Grant, though he knew that could not be. He was unwilling to admit that it had looked like nothing more than a *snuffing out*. As though the target and pedestal had been flicked into another dimension.

But Professor James Arkwright ran from behind the asbestos shield with a queerly hopeful look on his face. His actions were peculiar. He cautiously approached the low stump of the pedestal with one arm outstretched like a sleepwalker. Then abruptly he stopped and began feeling around the pedestal as though demented.

“What under the sun—” began Peter Grant, then gasped. For the professor’s hands were describing the outlines of a perfect sphere!

“Solid as a rock!” proclaimed the scientist jubilantly. “Here—you try it!” He took his assistant’s hand and pressed it against the same invisible surface he had explored.

Grant drew his hand back as though he had been stung, startled at having felt a hard, smooth object as invisible as the air around him. Then, ashamed of his action, he stretched his fingers out again and slowly traced part of the large sphere enclosed by the unseeable surface.

“It’s—weird!” he muttered shudderingly. “Something solid and invisible made out of nothing!” And from that moment on, Peter Grant instinctively feared and hated the globe.

“It roughly centers around the spot where the target plate was,” the scientist was saying. He felt toward the bottom of it. “And it rests on the stump of the pedestal, which looks as though it was sheered off as cleanly and easily as a buzz-saw would cut cheese.”

“But where *are* the target plate and the rest of the pedestal?”

“Inside,” returned the professor shortly.

"Why don't we see them then? We see the air inside of it."

The elderly scientist shook his head. "No, we don't. Grant, this is a phenomenon of phenomena. We see nothing of what is *in* the sphere. We are seeing *around* it. That is, the light rays striking it simply flow around it like the streamlines around a curved surface, and reconverge at their proper angle 180 degrees away."

"But light rays don't do that sort of thing, Arkwright!"

"Not ordinarily. But they do when they meet up with something that will neither absorb, reflect, or transmit them. Don't you realize what we have here, man?"

The scientist's eyes glowed like hot coals. "This is vibration-stasis one hundred per cent. A globe or shell of space in which all vibration completely cancels. A *laboratory universe!*"

NOW that they had it, Grant could hardly believe it, though they had labored for five years to see this result. Theory had blossomed directly into experimental fact. Their formulae had shown that transverse, polarized waves, striking a sensitized selenium surface, would create a surrounding shell of vibrationlessness. A thin shell, but inconceivably impenetrable.

Grant touched it again, marveling. Then he rapped his knuckles on it smartly. The only sound he heard was that of flesh being bruised. He raised his fist, to give more powerful blows, but stopped. He turned and clutched the scientist's arm.

"Arkwright, it's impossible! If the shell is impervious to radiation, how can the rays of the tube reach the target? The shell must instantly disolve when its power source is cut off."

"It is cut off, Grant, many times a second. But each time the shell forms and cuts off the tube rays, the shell automatically vanishes again. The tube rays again strike the target and again the shell forms, etc., millions of times a second. To our slow senses, the shell is continuous in duration."

He looked around. "Now let's make some real tests."

He picked up a heavy steel bar, poised it over his head and brought it down on the invisible surface forcefully. The bar halted abruptly and made no more sound than if it had hit a wet rag in mid-air. The professor tried twice more, wielding the iron club with sufficient strength to have demolished anything else in the room. The floorboards beneath the pedestal creaked in protest, showing that the full force of his blows was transferred to them.

"In the last analysis," said the professor, wiping his forehead, "matter is vibratory. Nothing vibratory can pass that shell of vibration-stasis. And everything in our known universe is vibratory."

"Therefore *nothing* can pass it?"

The scientist strode suddenly to his desk and came back holding an automatic pistol gingerly at arm's length. "Here," he handed it to Grant, "I've always been afraid of these things. I don't really know why I keep it around. You fire at the globe."

Grant stared at the ugly object in his hand. "This may be dangerous," he protested, "if the bullet ricochets. Besides, people may hear the noise and send police."

"Nonsense!" snorted the scientist. "People around here have heard so many explosive noises from this laboratory that they wouldn't turn their heads if we dropped a cup of nitro-glycerine on the floor. The bullets are not steel-jacketed, so they

won't ricochet except at extreme angles. However, we'll take protection behind the asbestos shield."

They stationed themselves behind the tall shield and Grant peered around the edge with one eye. Though unfamiliar with weapons himself, he took a firm grip of the cold, hard stock and aimed for the center of the globe, as nearly as he could judge. He pressed the trigger.

The roar of the gun seemed like the collapse of the building about their ears. Five bullets spat forth before Grant realized he must ease back on the trigger. He looked at the weapon shudderingly. How easy it was to kill!

Professor Arkwright ran from behind the shield like a scurrying rabbit. His triumphant shout burst out as he pointed to the floor just beside the pedestal stump which held the transparent ball. Three wide, flattened disks of hot, smoking lead lay there, where they had fallen after smashing against the globe. The other two bullets had evidently struck at a sharp angle and deflected somewhere.

"Do you see?" cried the professor, slapping the globe almost affectionately. "This is the ultimate in the way of barriers. The inside of it must be a strange world indeed — lightless, heatless, soundless, completely isolated from the rest of the universe. A space that knows nothing of the normal laws. A different universe!"

"I—I confess I don't really understand it!" Grant shook his head slowly. "Something made out of *nothing*

that stops bullets! Why wasn't it knocked off the pedestal? It must be light as a bubble, yet stands there like a rock."

"Inertia is one of the normal laws," answered the elderly scientist. "But it obeys no normal laws. Any pressure applied to it on the outside is not transmitted to its interior, therefore it does not move."

"I'd like to try a cannon-ball on it," growled Grant.

"And yet it *is* as light as a feather, or lighter, for it weighs nothing. You know, it is something like thought. Thought is intangible, weighs nothing, yet exists in some unnameable way."

"But thought won't stop bullets."

"Has anyone ever deliberately built a *wall* of thought?" demanded the professor sharply. "Grant, there are things in the future of science—"

HE moved toward the control switch of the rumbling cyclotron that powered his tube. "At any rate, we've stumbled on something here as significant to science as Faraday's first electromagnetic field, or Madame Curie's first discovery of natural transmutation in radium. Faraday utilized the interior of his field to produce electricity. Rutherford and others used radium rays to explore subatomic fields. This field of ours, this waveless stasis—"

He jerked the switch of the great machine that supplied power. The cathode of the tube dimmed and its strange emanation ceased. They watched the space where the selenium target had been. Slowly something

appeared there. A phosphorescent haziness solidified and became the target plate resting on the flat top of the wooden pedestal. The glow vanished suddenly and everything was normal.

Grant reached out a hand, half expecting to feel that weird barrier again, but nothing was there. He touched the target plate gingerly; it was cold, strangely. But the touch had been enough to upset the sheared pedestal and its top part tumbled off, separating exactly where the shell of stasis had gone through. The cut was clean and smooth, like that of a sharp axe.

"No harm done to the matter *within* the shell," remarked Professor Arkwright irrelevantly. "Grant," he said, "what do you suppose a person would find inside that shell?"

"Why, nothing of course. No light, sound, heat or anything from the outside world. It would be like a tomb. No outside stimuli would come through—nothing."

"Nothing, you say," mused Professor Arkwright. "Nothing *normal*—that would be more correct. We might conjecture for hours regarding the interior of the shell without arriving at any conclusions. It stands to reason we can't explore that region with instruments from the outside, so we'll put some inside and form the shell around it. We'll use one of our high stools for a stand."

A few minutes later they had set the target plate on the high stool. Beside it reposed a thermometer, a barometer, an electroscope, a tuning

fork with a recording attachment, and lastly a photographic plate protected by a red celluloid shield.

The cyclotron was again turned on and again they saw the breathtaking vanishment of everything within the charmed area. They carried out their tests one by one.

First, the twin of the tuning fork inside was rapped smartly a dozen times with a steel hammer. Its pure bell-like tone buffeted the invisible sphere for long minutes.

Secondly, an ordinary electric heater was brought close and turned full upon the globe for ten minutes. On the other side of the globe, out of direct range of the infra-red beams, the professor experimentally held a candle. As though there existed no barrier between, the wax softened. The candle bent ungracefully and finally became a shapeless mass that dripped melted wax to the floor.

Arkwright smiled significantly at his assistant, then motioned for the portable x-ray tube to be wheeled up. Its powerful beam was thrown against the globe. A fluoroscope screen placed beyond the globe flared up with ghostly luminance.

Finally, a mercury-arc lamp was turned on stutteringly, and its intense light trained on the space that looked as though it were absolutely empty. The end of the beam, without loss of focus, limelighted the wall beyond with its purplish-white glare.

"Perfect!" exclaimed Arkwright, running to the switch and stopping the cyclotron.

They watched and saw again the

curiously delayed reappearance of matter within the adamant shell of stasis. When the instruments had become solidly real, the two men examined them eagerly. The candle-black of the tuning fork's recording attachment lay unmarked. "No sound waves pierced the shell," summarized Arkwright. "The two tuning forks thetic vibration will easily work within ten feet—ordinarily."

The two thin gold leaves of the electroscope hung omplacently side by side. "The x-rays did not produce one single ion within the shell!"

The thermometer's reading had not changed one fraction of a degree. "The infra-red rays of the heater did not penetrate at all. They simply flowed around, as light rays do, converged on the other side and there melted the candle."

The photographic plate, when developed rapidly, was clear. "The ultra-violet rays of the mercury-arc didn't get in a peep."

"But shouldn't they?" queried Grant. "If the shell is broken and reformed many times a second, why didn't the rays of light, heat and the x-rays work through during the turned-off phases of the cycle? No matter how rapid the cycle is, electro-magnetic beams at a speed of 186,000 miles a second must plunge through!"

Arkwright held up a scornful finger. "Grant, you forget. Electro-magnetic beams are discontinuous themselves. Planck's quantum formulae show that. When you cut a quantum in half, you don't get half

a quantum. You get nothing! The cycle of this shell is rapid enough to chop all quanta in fractions and therefore cancel them."

HIS voice rose in triumph. It was quite natural under the circumstances, though Grant had to smile. "*Nothing* passes that shell of vibration-stasis!"

"I guess you're right," confessed Grant.

"Nothing; except perhaps—"

"What?" asked Grant as the scientist paused. Then his eyes riveted on the fifth instrument that had been within the shell. "By the way, Arkwright, what was the idea of the barometer?"

The professor started slightly out of a thoughtful study. "You will notice," he said quietly, "that its reading did not change in the slightest."

"Which means the air-pressure within the shell did not change. But—"

"Which means," interposed the elderly scientist, "that within the shell exists a space containing *breathable* air."

Grant gasped. "You mean—"

"I mean I'm going to spend a few minutes within that shell! I'm going to be the first man to exist in a different universe, completely and totally cut off from our universe! There will be no sound, no light, no heat, no rays, no indication from the outside world that it exists. That, Grant, will be a magnificent experience!"

"I think it's plain crazy!" protested Grant vehemently. "And I think you're utterly mad to even entertain the idea. We don't know what would happen—there might be instant death waiting within that unknown globe!"

"Drivel!" scoffed the professor, undeterred. "Particularly, I want to try some telepathy experiments between ourselves, separated by the stasis-shell. After I'm in, you'll take a pack of ESP cards and run off the first ten. I'll be recipient and try to catch your calls, memorizing them to check later. We've always been a good telepathy team, with me as recipient, so if the shell does not interfere, we should get results."

Grant was twisting his hands together nervously. "Arkwright, for the last time, give up the idea. It's positively insane—"

"Grant, a scientist is not supposed to work on hunches. But I have a hunch now and I'm going to play it for all it's worth."

"But the cyclotron—it had a bad wheeze in it the last time we ran it. You know it has been in need of repairs for the past week. I—"

"Enough of that!" cut in the professor sharply. "I'm still your employer. What I say goes around here!" Then his voice softened as his assistant flushed. "Sorry, Grant. I didn't mean to be peremptory. But, lad, I'm determined to go through with it."

Grant nodded helplessly. Then his eyes lit up. Without a word he dashed to the living quarters and returned with Linda, the house cat. He placed

it on the stool beside the target plate and stroked its soft fur for a moment. The cat began purring and lay down contentedly.

"Linda is to be the guinea-pig, eh?" grinned the professor.

"I insist," said Grant firmly. "Why risk your life needlessly? If Linda comes through unharmed, you will be reasonably safe."

The cat showed no alarm up to the moment it flicked out of visibility behind the mysterious wall of stasis. Fifteen minutes later, when the cyclotron current was turned off, the cat reappeared a foot off the floor. It landed on its feet, obviously puzzled, but otherwise unharmed. It sat down and began licking its fur unconcernedly.

"There you are," exclaimed Arkwright. "The inside of that stasis-shell is as safe and sound as a bed."

Grant grunted non-committally and helped the professor arrange himself for the final experiment. After careful estimation, they tilted the projector tube so that its cathode beam would rise at a slight angle. It now focused on the target plate set in the scientist's lap as he sat on the stool. The front of his body was protected against possible burns by heavy asbestos paper. With his legs doubled and his head bowed, there would be at least a foot clearance on all sides from the shell itself.

"All set!" cried the professor impatiently.

Grant tried to think of something cheerful to say, but found a bother-

some lump in his throat. "Be careful!" he said at last, huskily. It was at a time like this that he realized how much he liked the old scientist for himself. Their relationship was almost that of father and son.

"Don't worry yourself sick, lad, while I'm in the shell," said Arkwright sternly. "Remember that I can dissolve it at any instant by tipping the target out of focus. Au revoir, Grant. Give me the full fifteen minutes—no cheating!"

Grant tightened his hand around the switch handle, took one last look at the professor, and jammed the knives together. The cyclotron revved to high speed and in a few seconds the projector tube glowed brightly. Grant kept his hand on the switch and watched as Arkwright's crouched body became surrounded by the usual shimmering haze. Then suddenly he was gone and Grant's nerves gave an answering twinge.

IN accordance with their plan, Grant waited a full minute and then ran through the telepathy experiment. He picked off the first ten cards of the shuffled pack of ESP cards, concentrating on each in turn. At times, in their previous trials together, the professor had been able to call off five out of ten correctly.

This done, Grant looked at the clock. Ten minutes to go! He lit a cigarette, took three puffs, and then flung it down. He turned his head carefully as the deep, steady rumble of the cyclotron seemed to change. Imagination or not? The mighty machine did need repairs and—

He ran to examine the dials. Something *was* wrong! The raised voltage showed that the governor was out of order, allowing the electromagnets to spin without check.

White-faced, Grant reached for the

switch and even as he did so the whine of the machine ran to inaudible pitch. A gush of ravening energy burst from the accumulators. The projector tube flared up like a lamp, shooting a tremendously powerful beam at the target within the stasis-shell. Then it suddenly went dead, with a slight tinkling pop from its interior.

But nothing else happened and Grant pulled the switch with a prayer of thanks that an explosion had been averted.

The cyclotron's throb died away, and finally stopped. Grant turned to help the professor from his stool. That was the end of that for the time being till a new tube could be made. Grant stopped short with icy chills running up and down his spine. *The scientist had failed to materialize!*

Heart pounding wildly, Grant stood in a frozen attitude for perhaps a minute, waiting and hoping. But the blank space where the stool, target and professor should be was still blank. He strode to the invisible globe, feeling around it. He tried to conceive of the fact that within easy reach of his hands was the professor, though he could not see one atom of his body.

What had happened? Grant tried to reason out this strange development. The last reading of the cyclotron's output showed close to fifteen million electron-volts. Had this frightfully powerful surge of energy in some way destroyed the target? But then why hadn't the shell dissolved, as it had the other times when the polarized beam no longer impinged on the sensitized selenium?

Up till this point, panic had not assailed Grant. He could not quite believe that some ghastly catastrophe had occurred. He expected each

second that the stasis-shell would vanish, as it should, and Professor Arkwright would step out.

But now the thought forced itself home that the shell was *not* going to dissolve. Some unknowable, unpredictable thing had happened when the excessively strong energy had shot through the system. As a result, the stasis-shell had permanently solidified! And within it was a living man, cut off from the normal universe as though he were buried in deepest space!

Grant clenched a trembling hand and rapped sharply with his knuckles on the invisible shell.

"Arkwright!" he called chokingly. "Arkwright, are you all right? For God's sake, answer me!"

He raised his two fists and pounded at the adamant shell insanely, screaming and yelling. When his hands were bruised, he kicked with his shoes till the leather cracked. There was no indication from within the globe that the imprisoned scientist heard or could hear.

Sometime later Grant slid to the floor beside the shell, exhausted, confused of mind. He cursed himself aloud, bitterly. Why had he been fool enough to let the professor go on with his insane plan? And knowing all the while that the cyclotron was badly in need of overhauling and could not be trusted to deliver a dependable charge?

But these recriminations were quickly crowded out by the bursting thought of what this meant. Professor Arkwright was imprisoned in an inescapable shell without food or water and with only enough air to feed his lungs for an hour or so. In that short time he would be dead! The stasis-shell would be his tomb! And a more perfect tomb had never been conceived in the mind of man—light-

less, heatless, soundless, impenetrable to the last degree!

His tomb!

"No! No!" screamed Grant, springing to his feet as though jerked up by wires. "I must get him out! I must!"

In a blind fury he attacked the shell with anything he could lay his hands on. He smashed at it with chairs, tripods, heavy tongs. When he again sank exhausted to the floor beside the invisible shell, he saw that the hands of the clock had moved inexorably. It was now close to an hour that the scientist had been in the globe.

Grant put his hands to his eyes and tried to shut out the mental picture of Arkwright gasping for air, dying by inches, within that damnable globe. Yet he knew that was only half the picture. For if his mental state was agonizing, what of the mental tortures the professor must be going through? There could be nothing more horrible than being buried alive, and that was the fate in store for Arkwright.

"I'll go mad!" moaned Grant, holding his head and rocking his body.

He jerked his head up suddenly. "I must be mad already!" he told himself almost calmly. "I seem to hear a voice—Arkwright's voice!"

He remained quiet and listened. It was all confused and impossible, but the voice seemed to be telling him something. It was not in words, nor in pictures, nor in any normal way. It seemed to be a mental voice—telepathy!

GRANT almost stopped breathing. Before he had gone into the belief that thought would penetrate shell, Arkwright had intimated a belief that thought would penetrate

the stasis-shell. Grant concentrated his mind on catching the message. It was not articulated, or in any way spoken, but Grant's mind unconsciously translated the meaning into words.

"Grant, I hope you can hear me," the telepathic "voice" said. "I've been catching your mental radiations from the first moment the globe surrounded me, cutting off the rest of the universe. Thought, and that alone, penetrates the stasis-shell. Therefore, thought is not a vibration. It is an incomprehensible direct form of motion through the ether. So much for that.

"I know practically all that has occurred, Grant, for I've been reading your thoughts as easily as reading a book. Somehow, the total supreme isolation in which I am so sharpens the powers of my mind that it can pick up thought-messages without effort. Not only yours, but those of all the world, or all the universe! In the past hour I've tuned in or heard—call it what you will—the mental emanations of minds half-way around the world. Also the telepathic messages of a strange being somewhere out in the void. But that is beside the point right now.

"Through your mind, I read the dial of the cyclotron when it temporarily went wild and ran up to fifteen million electron volts. The result, Grant, was to make a stasis-shell so strong that it made a permanent warp in the ether. That is why it did not dissolve, and that is why it will *never* dissolve again!"

Grant moaned and shuddered.

"Your thoughts are coming to me," went on the psychic-voice, "incoherent with agony at my fate. It shocked me no little at first, too, but I've made

up my mind to take my fate as stoically as I can. Don't blame yourself, Grant. Not much more of life is left me, now. Already my lungs are gasping for fresh oxygen in this terrible coffin. I shall spend my last moments tuning in the thoughts of scientists around the world. Thus I will die as I wish—"

The mental message from within the globe ended abruptly. Peter Grant continued to sit there beside the invisible tomb that contained the slowly dying body of Professor Arkwright. Dazed, hardly knowing whether it had been hallucination or not, Grant watched the swift seconds tick by, marking off the minutes of the entombed scientist's life.

Grant strangely lost his fear of going insane in the next hour. Somehow those words had been comforting, saving to his mind. But suddenly the same terrible fear stabbed through him, for he again heard the voice of Professor Arkwright!

How could it be? Two hours had gone by!

"Grant! Grant!" the mental voice seemed to call. "God have pity on me, but I did not die! My body has simply gone into a comatose state and my mind is as active as ever. *I cannot die!*

"The forces of life are vibratory in nature. And nothing vibratory can pass through the shell. Do you see? My life-essence cannot escape the globe! I am doomed to live on—forever and ever! Through all eternity I will be imprisoned in this narrow universe—*without hope of death!*"

Peter Grant laughed, gibberingly. Then he fainted and his mind was cognizant of no more.

But the mind of Professor Arkwright—





THE EASY WAY TO POPULARITY

Here is a complete education for just a few cents. Amazes your friends and astounds the girls at parties and dances. Be able to protect yourself.

Swing Steps

Complete guide to swing dancing.

How to Be a Detective

Criminal methods and G-man methods — Complete and scientific Crime detection.

How to Dance

The new guide for self-instruction in the latest steps from square dancing to swing waltz.

Tip Top Tapping

Simplified lessons in Tap dancing, for men and women.

Police Jiu Jitsu

As taught to Police, Marines, "G" Men, Soldiers.

Scientific Boxing

Includes Diet, fight training, K. O. punching, Ring Rules and ring history. Illustrated with slow motion movie strips.

Get These Profusely Illustrated Books at the Special Price of:

35c each — 3 for \$1.00 — or 6 for \$1.75

M. L. SALES CO., DEPT. Q
Room 315, 160 W. Broadway, N. Y. C.

I enclose \$.....for which please send me the following books (check those you want).

- | | |
|--|--|
| <input type="checkbox"/> Tip Top Tapping | <input type="checkbox"/> Swing Steps |
| <input type="checkbox"/> How to be a Detective | <input type="checkbox"/> Police Jiu Jitsu |
| <input type="checkbox"/> How to Dance | <input type="checkbox"/> Scientific Boxing |

Name

Address

A Sensation At This Low Price!
Reg. \$3.50 Metal Shonk PIPES

2 FOR 1
(60c ea.)

- Saddle Bit Mouth Piece
- Smokes Dry and Clean
- Scientifically Cooled
- Genuine Briar Bowl Removable

MAIL ORDERS PROMPTLY FILLED

HOUSE OF BARCLAY
545 Fifth Ave., N. Y. C.



AN EASY WAY TO SOLVE YOUR GIFT PROBLEM!

ARE YOU ONE of the 16,000,000 DRAFTEES ?

DO YOU EXPECT TO BE IN THE ARMY SOON ?

WHAT PREPARATIONS HAS THE ARMY MADE FOR YOUR TRAINING ?

WHAT WILL YOUR LIFE IN THE ARMY BE LIKE ?

Don't miss the answers to these vital questions. They appear with 200 actual Army photographs in the current issue of

"FIRST MILITARY CONSCRIPTION"

Now on the newsstands

ONE UNION LIFE POLICY INSURES ENTIRE FAMILY



Protects
**GRANDPARENTS
PARENTS
CHILDREN**
Ages
0 to 75

REAL LIFE INSURANCE *Free 10 Day Inspection* **Under State Supervision**

Genuine Life Insurance priced for every family! Don't fear severe drains on family finances if death strikes unexpectedly—new, low cost family group life policy affords genuine protection for every member of your family up to 10 persons! Grandparents, parents and children, from ages of a few days to 75 years—all insured for only \$1.00 a month!

NO MEDICAL EXAMINATION

The Union Life Policy gives you so much for so little because all costs of doing business are cut to the bone... the saving is passed on to you! Pay only one premium, once a month, by mail! No collectors—no sales agents! No medical examinations! All you do is send for a specimen policy. Do it now! Discuss it with family and friends.

LIBERAL BENEFITS SHOWN IN TABLE BELOW

The amount of insurance payable upon the death of any of the persons insured hereunder shall be the amount set out in the following table for the attained age nearest birthday at death of such person divided by the number of persons insured hereunder immediately preceding such death.

Table of amount of insurance purchased by a monthly payment of one dollar.

Attained Age at Death	Natural or Ordinary Accidental Death	Auto Accidental Death	Travel Accidental Death
	Amount	Amount	Amount
0-40	\$1000.00	\$2000.00	\$3000.00
41-50	750.00	1500.00	2250.00
51-56	500.00	1000.00	1500.00
57-62	300.00	600.00	900.00
63-68	200.00	400.00	600.00
69-75	100.00	200.00	300.00

PAYS UP TO
\$1000.00 \$2000.00
for natural or ordinary death for auto-accidental death
\$3000.00
for travel accidental death

**NO AGENTS WILL CALL
SEND NO MONEY
Just
MAIL THIS COUPON
Today!**

UNION LIFE INSURANCE COMPANY
155 N. CLARK STREET, CHICAGO, ILLINOIS

Dept. D

Gentlemen: Please send me the Union Life Family Group Policy for free inspection, without any obligation to me.

NAME

STREET AND NO. R. F. D.

CITY STATE

MAIL THIS COUPON TODAY!